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The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

Emlen Painter

Emlen Painter was elected president of the American Pharmaceutical Association at the San Francisco meeting in 1889, and laid down life's burdens January 10, 1890, therefore was not permitted to preside in convention.

The frontispiece seems to us appropriate, in view of the fact that the American Pharmaceutical Association convenes again in San Francisco after the lapse of a quarter of a century; the president elected at that meeting was identified with pharmacy of the East and West.

The subject of this brief sketch was born at Concord, Pennsylvania, in 1844, educated in Wilmington, Delaware, and graduated from the Philadelphia College of Pharmacy, with honors, in 1866. The following year he came to San Francisco, accepting a position with H. P. Wakelee. In 1867 the firm of Painter and Calvert was established and continued for ten years, when the partnership was dissolved, Mr. Painter retaining the store at the corner of Clay and Kearney; later he opened several other stores, all of which he successfully conducted.

His name is closely associated with the founding of the California Pharmaceutical Society and the College of Pharmacy. To the latter he gave of his time for many years and with his co-laborers had the satisfaction of seeing the school devlop into an institution of importance to pharmacy.

Mr. Painter returned to Pennsylvania for rest when his health began to fail, and thereafter decided on making his future home in New York City. Here he purchased the pharmacy of John Sheddon, at Broadway and Thirty-fourth streets, and under his management the business prospered. Mr. Painter became identified with the New York College of Pharmacy, was elected one of the trustees and Chairman of the Board of Examinations. He was one of the editors of the National Formulary.

In the fall of 1889 Mr. Painter disposed of his business on account of impaired health and had departed for the South, when increasing feebleness persuaded him to return to his home at Spuyten Duyvil, N. Y., where the final summons came January 10, 1890.

Professor P. W. Bedford, in speaking of Mr. Painter, paid this tribute: "He was a man of remarkable activity, of honest, earnest opinions, and when satisfied that he was right, he was not to be swerved by motives of either opposition or any other cause. He pursued what he believed to be right to the end."

Contributed and Selected

A PROPOSAL FOR THE ELEVATION OF THE PROFESSION OF PHARMACY.*

C. F. NELSON, PH. D.

That Pharmacy, as it exists today, is not a profession in the sense that law, medicine and dentistry are, I think we are all, at the outset willing to admit. That it is, on the other hand, more than a business pure and simple seems equally evident. The Pharmacist thus appears in society in a double role,—he is a professional man and he is a business man—many say he is neither.

There are many reasons why this condition exists,—why it has been necessary for the pharmacist in America to become much of the tradesman; to step down, as it were, from a full-time professional schedule to that of half-time merchant and half-time pharmacist. But it is not my purpose to discuss with you at this time. I desire rather to invite your attention to another, and, as it seems to me, a far more important aspect of this subject, namely; Must pharmacy always occupy this middle ground,—stand aloof from the professions on the one hand and apart from the domain of business on the other? Why should this anomalous condition continue? Must the pharmacist always straddle the fence,—one leg in professional soil, the other on *business* territory? Must he always stand in the middle of the Rubicon, and, as Daniel Vorhies Pike, the Kokomo lawyer in the "Man from Home" put it, "Get hell from both sides?"

The old professional ideal in pharmacy is dead. It died with the advent of the modern pharmaceutical house. We should not try nor should we desire to bring it back. We must set our eyes towards a newer and better light and follow in its path as our fathers before us followed in theirs.

When I was a boy of fourteen, my father apprenticed me to a stern and exacting member of the old school,—a man who believed that anyone who did not make all of his pills, plasters, ointments, tinctures and even fluidextracts was unworthy of the name of pharmacist. I have vivid recollections of the old back-room where all of this "pharmaceutical cooking" went on; of the big black kettle in which we made our lead plasters; of the large percolators for making fluidextracts of sarsaparilla; of the way we rubbed and rubbed to incorporate the mercury with the lard in preparing mercurial ointment; of the hours spent in coating pills with balsam of tolu dissolved in ether,—but, as I look back on it all now, I can see the many crudities and imperfections that crept in in spite of our professional zeal and care. We had no way of determining the purity of the ingredients used in making our preparations; no means, except purely physical

* Read at a recent meeting of the Kansas Pharmaceutical Association.

ones, for testing the strength of the completed product; no machinery to make our pills round and mechanically perfect. We were, in other words, compounders of our own products and, therefore, professional enough but very inefficient as measured by modern methods.

The history of economics offers us a striking illustration of the futility of clinging to antiquated ideals. We are all familiar with the fact that the introduction of modern machinery revolutionized industrial conditions, bringing about disruption of the old trades. Society had to reorganize itself to meet the new conditions. Much hardship had to be undergone; many were the bitter denunciations of the new regime. And yet it prevailed.

The guild of stone cutters vowed eternal vengeance on the new machinery which cut stones better and faster than they could—they would have none of them; their old methods were the best, they wanted their old trade to be as it always had been and yet,—the machine prevailed.

Woman, who had up to this time always worked in the home, was with remarkable rapidity thrust out of that shelter and put into the factory; again the age prevailed, society could do nothing to prevent it.

There are many pharmacists who cling fondly to the old ideal of preparing most of their own preparations. In a measure the pharmacist must always do some of this, but it is futile for him to attempt to compete with the modern manufacturer in the preparation of an ever increasing number of pharmaceutical preparations. The manufacturer has at his command the purchase of the best drugs at the cheapest prices. He can make a preparation faster and, therefore, more cheaply. By working with large quantities he can subject it to a number of rigid checks to insure its absolute accuracy. In short, with his machine he can make a better product more easily than the retailer can without machinery.

If then, we are ready to admit that the old standards and ideals are outworn, useless because times have changed, we are ready to ask, Are there any new ones to take their places? Is there a set of new ideals for the modern pharmacist which will prevail in the present age, which will place him in the ranks of the professional man where he really belongs? I think there is, and, while a complete solution of the problem is not at hand, there are many avenues of light, some of which the present generation may only behold, and not walk in, while others are open for his progress, if he has faith enough and the strength to believe in himself and the willingness to turn conviction into action.

A profession remains a profession because in the long run—in terms of decades, its members perform a real service to society. The pecuniary reward for professional service is after all secondary. A specialist must first of all be desirous of curing his patient; of being interested in the case for itself. If he have only the desire to make a profit he soon fails.

Much of modern business today has become infused with this professional ideal of service. Many business men look upon their establishments as places where the public can be served—"After we have served you we will speak of the reward." The pharmacist was probably the first store-keeper to carry out his ideal. He "served better than he knew" when he first introduced the sale of postage stamps; when he put a telephone in a convenient place in his store for

the use of his customers, only to bother him; when he bought a city directory for the use of all and even furnished scratch paper free of charge. Many will say he did it to draw trade. (If there is much trade drawn in that way his competitors would soon have found it out.) No, he did it because he had a good heart; because, way down in him was the mouldering desire to be of service. He showed that he had the professional ideal. Here was humble service to be sure, but service it was. Something for nothing was the unformulated and latent slogan within him, but it was still there.

If you agree with me then that the pharmacist has within him the true professional desire of service, let us ask are there no larger and richer fields open to him in modern life? Can he not aspire to the plane of the physician and the lawyer and still remain in his chosen calling? Must he be content to sell postage stamps, furnish telephone and city directory to the people of his community or can he enlarge his sphere of action and in so doing also reap his due pecuniary professional rewards?

To those who follow the trend of modern medicine, nothing is clearer than that clinical diagnosis is becoming more and more subject to chemical and bacteriological analyses. The mere recital of symptoms by the patient does not satisfy the up-to-date physician. He is finding it increasingly necessary to check this information by actual chemical and bacteriological data. It is precisely here where the pharmacist can become the physician's colleague. Can give advice and help as a bacteriological and chemical expert, can aid in important diagnoses and thus earn the lasting respect of the individuals of his community. Precisely here, can the pharmacist take his place beside the physician as a real professional man and with him help in the elimination of pain and suffering. There are hundreds of things the physician wants to know which the pharmacist could answer if he only would, e. g., What does this urine contain? Are there any tubercular bacilli in this sputum? Does this throat swab contain the germs of diphtheria? Is this blood serum positive or negative for typhoid fever or syphilis?

All of these questions should be answered daily, many times during the day, but there is no one now to do it because the physician has neither the time nor the necessary equipment, nor even the technique for that matter, to carry out all of these tests. I think it a conservative statement to say that in most communities there is today a latent demand for at least 500 Widal tests for typhoid fever each year. And as we shall see later, the demand for analytical work does not begin to stop here.

We are living in an age of standardization, everything under the sun is being standardized; medical schools, law schools, schools of pharmacy, cities of the first class, cities of the second class, pure milk, ice cream, lemon extract and spirit of camphor. Many of these you see call for the services of a chemical analyst. We are also ever increasingly in need of the services of the analyst in our every-day life; to see that the products we buy are what they claim to be and to satisfy ourselves that the products we manufacture and sell meet with the required standards; an ever-increasing number of manufacturers, business men and private citizens need to have materials constantly analyzed. Here

again there is a vast latent demand waiting only for some one to do it; this milk man wants his milk tested; this ice cream manufacturer his cream, probably his sugar. A baker would gladly pay for an analysis of a flour he bought in large quantities, or his egg powder, or his cooking oil. A manufacturer wants to know if the water he uses is suitable for use in his boilers, or if the coal he bought is what he contracted for. All of this work is truly professional in character. The pharmacist already has his store, his chemicals, his chemical training; and he is therefore the logical man to undertake it. If he rises to the occasion he cannot fail to advance himself, at the same time to elevate the character of his profession.

I have tried to show that there is a vast latent demand in every community for real analytical work of a chemical and bacteriological character, and that the pharmacist, by reason of his training and equipment, is the logical man to undertake it. I have also tried to point out that if he does attempt this work he will pull his profession upwards with him. The matter may probably be summed up in this manner. The modern pharmacist should be not a "pharmaceutical cook" whose ideal lies in making a few galenical preparations, but first of all a "prescription specialist," a man who understands how to compound a prescription accurately and scientifically, who can determine and check the purity and strength of the ingredients that enter into it by chemical and biological methods; and, in the second place, he should be a chemical and bacteriological expert to help the physician diagnose his cases; to help the manufacturer and the private citizen solve their chemical problems. He should be able to run for the office of city chemist and city bacteriologist. We don't have many such men in Kansas as yet, but we will have, and soon.

The time then seems ripe for the establishment of at least small analytical laboratories in connection with our drug stores, not excepting even those in very small communities. The beginnings may be small and modest. The outlay in money need be very slight. One may choose to specialize on only a few kinds of analyses at first, say, examination of throat swabs, sputum analyses, or Widal's test for typhoid fever, and then gradually widen out as one's experience grows. The druggist is always wanting to put in new side lines to improve his business. Certainly a departure of this sort would be valuable as a money maker after it was worked up, and it would do much to elevate the profession as a whole.

The laboratory should occupy a prominent place in the front part of the store. It may thus be made to pay for itself as an advertising medium. To say that it will improve the looks of a store more than the modern soda water fountain needs no argument. The effect it will have on the physician and also on the trade seems obvious. That it can be made profitable in most cases looks equally evident. What expense will be involved in the establishment of such a laboratory? To answer this question we must of course know on how large a scale we wish to operate. But suppose we get quotations on a moderate chemical and bacteriological outfit. An expenditure of less than $500.00 will give us all we need, will equip us with first class analytic balances, microscopes, ovens, autoclaves, glassware and chemicals, will give us in fact a very good equipment for making most of the determinations we will be called upon to make. When this

amount is put along side of what a good many druggists pay for soda fountains, many of which do not much more than pay for themselves, but are only used to draw trade, I think you will see that a neat analytical laboratory will serve the latter purpose much better and, at the same time, fill a real need. The expense of operating such a laboratory need not be very large. Many druggists detail a man to look after soda-water and cigars and sundries, at a cost of $50 or $60 per month. The average young man that enters the analytical laboratories of our large corporations after leaving college begins at $60 to $75 per month. A bright graduate of the three or four years' course in pharmacy has all the basal education he needs to begin in such a laboratory and can help with the general drug business until there is enough work to occupy his entire time in the laboratory.

There is one matter, in this connection, that I wish particularly to call your attention to at this stage: The pharmacist has for years received in our schools of pharmacy a good chemical training but he has not made proper use of it. He has, it seems nearly always, taken a back seat, has not mixed in the fray, and consequently, in a short time after leaving college, he feels incompetent to anything more than fill prescriptions or sell cigars. Imagine a physician doing the same. He comes out of college as "green" as the pharmacist, but he has to "pitch in" and do things he has never done before. He does things every day which he never was taught how to do while in college. Naturally, most pharmacists have not been through the routine of most of the common bacteriological and chemical tests that would be required of them if they set out to become analysts, but they have the basal education necessary and it is only a matter of a little study, nerve and practice for them to become experts along this line. Moreover, the routine analysis of milk, water, foods, drugs, urine, blood sputum, serum, etc., have become so systematized that details and directions of procedure are easily available. It only takes a little time and practice for any one with a pharmacist's previous training to become expert in carrying them out.

If you have followed me in the rather scattered remarks I have made you will see that I have tried to establish the following points:

First—That pharmacy as it is today is a "mongrel creation" without standing in either the professional or business worlds.

Second—That the old ideal of pharmacy as a place where galenical preparations should be manufactured has to be in a large part abandoned because of the futility and undesirability of competing with the modern first-class pharmaceutical houses.

Third—That while the pharmacist should progressively abandon making most of his galenical preparations, he should increasingly strive to maintain his standard as a professional man by becoming a better "prescription compounder" and should bend his efforts towards the accurate checking of the drugs he buys and dispenses, rather than to their manufacture.

Fourth—That I have tried to show that the pharmacist has never lost the professional ideal of service and that modern life has a place for him in which to exert his very best efforts in a truly professional way.

Fifth—We have seen that there is a vast latent demand for analytical work of a chemical and bacteriological character from both the physician and the public in general. This work the pharmacist should do and can do by establishing an analytical department (even though it be very small) in connection with his store.

Sixth—That the analytical laboratory will become a source of profit to the druggist, it will serve a real need in the community, and last but not least, by doing this scientific work, the pharmacist will establish himself on a plane with the physician and lawyer and thus elevate his calling to that of a true profession.

SOME THOUGHTS FOR TEACHERS.

ZADA M. COOPER.

Almost every magazine one picks up and even the newspapers are printing articles criticising the public school system. No part of it escapes; the kindergarten and the university alike get their share. "What is Wrong with the College," "Why I am Poorly Educated," or similar titles are a familiar sight. Apparently, these critics of our schools lose sight of the fact that all sorts of people go to school and ***almost*** all sorts go to college. They forget that in the manufacture of anything the raw material controls the nature of the finished product; as some one has aptly said, "Critics of colleges never consider the kind of grain that comes into our hoppers."

We, who are teaching in colleges of pharmacy, cannot help wondering if we are in any way concerned with the imperfections, if those faults are in any way reflected in our work. We should expect, perhaps to see the chief evidences in freshmen classes and are at once confronted with the idea that possibly a large proportion of students conditioned or failed during this year can trace their difficulty to the public schools.

In any consideration of the subject, the mentally unfit, those actually lacking in capacity, may be disregarded. There are such, but very few reach college. The individuals who are below the average of intelligence are not many because they are eliminated earlier in their school career. Speaking of average intelligence it can be said with little fear of contradiction that any one of average intelligence who works conscientiously will get through college creditably.

To go back to the original question, there is no doubt that many general reasons are involved. Conditions are similar to those existing in freshmen classes in any professional school or even in the colleges of liberal arts. Perhaps, the whole situation can be summed up under two heads, insufficient preparation and lack of thoroughness in that preparation. Some colleges of pharmacy are handicapped in having students who are not graduates of high

schools, though most teachers will concede that a high school education is little enough general education as a foundation for the study of pharmacy and the sooner all colleges adopt that as a minimum entrance requirement, the better it will be for them and for the profession as a whole.

However, insufficient preparation is a minor difficulty when compared with the lack of thoroughness; the one is within our control, the other entirely beyond it. We can say what the preparation shall be so far as quantity is concerned, but the quality of that work we may not specify. Even if we could, surface indications are of little value. Grades should mean something, they usually do mean something, and yet they may be absolutely worthless in foretelling what the individual may do in college. Doubtless every teacher in every college of pharmacy has had, not once, but again and again, in beginning classes some students who had so little knowledge of the most fundamental things as to arouse the wonder whether they knew the multiplication table or could read the English language intelligibly. Yet those very persons may have presented the best of credentials.

Even men who have done some years of work in a liberal arts college or who have a degree are among the failures in professional schools. The explanation of this is simple. The slipshod superficial work of the preparatory school has been continued, aggravated, perhaps, by the elective system which permits the choice of "snap courses," thereby fixing more permanently the bad habits of earlier years.

If it were possible to trace the real cause it would probably be found in the early years of a pupil's career, possibly at the very beginning. The child gets into bad habits of thought and bad habits of work and as the years go on the habits grow until it is almost impossible to accomplish anything in college. Probably, always in the beginning, these bad habits are acquired unconsciously but later they may be systematically practised. However acquired or however fostered, the result is much the same. It is impossible to rear a superstructure on such an inferior foundation. Sooner or later it is bound to topple.

There is one fault of the public school system that deserves more than passing attention because it is one which is carried right into college. In the words of a great educator: "This part and that part of the individual are developed most methodically with the result that the modern useful mind is full of water-tight or idea-tight compartments, snug places where assorted bits of information are safely tucked away but there is no communication between." Doubtless every teacher has observed this very fact when students fail to apply in one class room what they have learned in another. They appear not to dream that different class rooms are on the same planet. As this same author says further: "They are taught everything except how to pull themselves together, to think and act as entities, as personalities," and yet "Instant command of all the faculties at once is the one thing that life demands of us in its crises."

Educators are fully awake to the faults of the public school system and are, perhaps, doing all that they can to remedy them. At least, that is not our problem and discussion of these faults is unavailing except that thorough understand-

ing of any condition makes it easier to meet. Theorizing is useless, and there is little to suggest as to how we can overcome the conditions. The little that can be done must be largely personal assistance to each individual to help him to undo somewhat the faults, to replace his careless habits with careful ones, to teach him how to study.

Teaching students how to study can be to a considerable degree the outcome of an instructor's method of presentation. For example, the facts in any subject should not always be given directly to a class. If a textbook is used study is not limited to it but reference works are supposed to be consulted. In giving citations exact pages or paragraphs to be read is not as good as to ask that certain points of interest be looked up. Recitations should be conducted in such a way that a student must have read the references in order to recite. In assigning a lesson, attention should be directed to the points that must be investigated, the necessity for knowing the reasons involved in various processes, but students should be expected to dig out the facts themselves. Outside written work should not be resorted to for it puts a premium upon dishonesty. However great the effort on the part of an instructor, some students will not do the reading themselves but trust to providence or their neighbors. On the other hand, many can be induced to search out the subject and once they get the habit, they begin to acquire the spirit of learning which is the secret of success.

We must make our courses attractive and interesting, and attractive should not mean easy. Naturally an easy course may be attractive but the reverse is not necessarily true. In fact, the course ought to necessitate hard work but not disagreeable work. It is for us to make knowledge so vital that students cannot help being interested.

Whether dealing with poorly equipped students or the best, the function of every college is two-fold, one of which is sometimes minimized in practice or lost sight of entirely. The teaching of facts is not likely to be forgotten but it is not so easy to remember that the intelligence must be trained, that sound judgment and good common sense should be cultivated. It is general wisdom and ability to use his accumulation of facts, to correlate them when some specific situation arises, which makes the individual successful. No teacher can be present to direct the application (in real life) of information he may be trying to get into the minds of his class, no teacher can anticipate the emergencies that may arise. The teacher's duty is to try to awaken or to increase the enthusiasm for learning and to do this so thoroughly that students develop power to investigate for themselves and to apply for themselves their stores of information. Students, if they hope to succeed when they have left the college of pharmacy for the larger college of life, must acquire personal initiative, must be intellectually alert. Lyman Abbott summed up the situation in a few words when he said: "Education is not only the acquisition of information, it is even more the development of capacity to deal with the facts thus ascertained, it has come to be the acquisition of power even more than the acquisition of information."

Probably no definite system is available to teachers. There is no royal road to learning either for teacher or student. The ultimate end of independent thought and action on the part of students must never be lost sight of. Eternal vigilance

is the price. It is a laudable ambition for teachers to want degrees and what they stand for, but there is no degree which guarantees ability to teach. Teachers should be men and women with good red blood in their veins, not just "semi-vitalized text-books."

LIQUID PETROLATUM, RUSSIAN AND AMERICAN.

E. H. GANE, PH. C.

Liquid Petrolatum is destined to be, if it be not already, the most extensively used medicinal substance at our disposal.

In the crude form, petroleum has been more or less in use for many centuries, references to it being found as far back as 600 B. C. The use of the highly refined product known as Liquid Petrolatum is, however, of very recent origin, dating back only to the early eighties of the last century. Since that time in one form or another it has been recommended as a cure for almost every ill that flesh is heir to. In addition, it has also been used as a substitute for or as an adulterant of lard, butter and vegetable oils used for culinary purposes and it was investigations into its value as a food that led ultimately to its present enormous vogue in internal medicine.

It was early determined that Liquid Petrolatum had no food value, but passed unchanged through the intestinal tract. Nevertheless, petroleum emulsions, plain or combined with other medicaments, have been largely prescribed for some years and usually with very good results, despite the dogmatic assertions from test-tube investigators to the effect that these preparations were valueless or fraudulent. We know now that, while the claims made for these products were inaccurate, the preparations had real value due to the corrigent action of the petroleum on the intestinal tract.

Liquid Petrolatum as an internal remedy is distinctly an American idea. Little attention was paid to the work of earlier investigators by physicians until a series of papers presented to medical societies in Ohio and Indiana between the years 1900 and 1903 led to its continued use in that part of the country as a remedy for chronic constipation and intestinal obstructions. Since that time its use has been developed enormously, being especially aided by the strong recommendation of the great English surgeon, Sir William Arbuthnot Lane, given at the Congress of Surgeons held in New York in 1912. Much of the credit for its discovery as a therapeutic remedy has gone to Mr. Lane, though many American physicians antedated him in using it.

It is not necessary to do more than mention that the value of Liquid Petrolatum for medicinal purposes lies in the fact that it is inert. It is possibly the only medicine that has no medicinal action, but works purely mechanically. It is

simply a lubricant and its action is similar to that of oil on rusty machinery. It lubricates a defective drainage canal and its value appears unquestioned.

What we are particularly concerned with is the quality of the oil that should be used for medicinal purposes. This is especially important just now in view of commercial conditions in the petroleum industry. The U. S. P. requirements are exceedingly lax and admit of a wide range of products being used. Up to the outbreak of the war Russian petroleum was mainly used as a source of Liquid Petrolatum, and during the last two years enormous quantities of "Russian Oil" have been consumed. The quality was not always all that could be desired.

Russian and American petroleums are different in composition. American oil consists mainly of methane hydrocarbons with some olefines, while Russian oil is composed of naphthene hydrocarbons. The Russian oil can be refined more easily and more cheaply, so that it has held the market to the exclusion of American oil, the only medicinal oils on the market of American origin being oils that had been treated by filtration and decolorization with bone black. These oils did not hold their color and had also a strong fluorescence so that on esthetic grounds alone they were not popular.

The European war, however, cut off supplies of Russian oil completely so that we have been forced to look to American refineries for supplies of "White Oil." Owing to uncertainty as to how long the war would last refiners were not at first anxious to put up a plant that would have to be scrapped as soon as the war was over, but when it was evident that the war would last some time, several plants were started, and so rapid has been the progress made by our chemists in refining American oil that today one or two refineries are turning out preparations that compare favorably with the best Russian oils. This is no small achievement to have accomplished in so short a period of time.

The quality of the oil used as a basis for Liquid Petrolatum is of the highest importance and too little attention has been paid to this point. Oils of all grades have been sold for medicinal purposes and some of the largest houses have supplied and are supplying products that were far from being what we might expect from such sources. The only requirements insisted on in many cases were that the oil should be colorless, tasteless and odorless. But these requirements are by no means adequate. Many Russian oils that met these requirements were still not fit for the uses to which Liquid Petrolatum is put and the same is even more true of American oils.

Being used solely as a mechanical aid, Liquid Petrolatum must be taken for long periods and often in large doses, and, therefore, extra precautions must be used in obtaining an oil that is *inert*. Despite its chemical properties, petroleum is by no means inert physiologically. For a long time it has been known that workers in petroleum refineries were especially liable to skin affections of a serious and even malignant character. The recent researches in England of Ross and his co-workers have demonstrated that petroleum, among other products, contains a substance that possesses the property of causing increased cell growth. The importance of this discovery cannot be over emphasized for it is easy to see

how important a factor it may be in connection with the internal consumption of Liquid Petrolatum. Were the oil only taken for short periods the presence of this substance might not be very material, but it can readily be seen that the constant presence in the intestinal tract of a substance possessing the above mentioned property might result in most serious consequences especially in cases where there is a lesion of some sort. Every precaution should be taken to insure the elimination of this substance from petroleum for internal administration.

It is also important that Liquid Petrolatum be free from any other substances that might be active physiologically. This is especially necessary with American oil which contains varying proportions of olefines or unsaturated compounds. These hydrocarbons may enter into combination with bodies of an acid nature, with acetones, aldehydes and compounds having an hydroxyl group. They may enter into combination with substances in the alimentary tract, and while little is at present known of their behavior in this connection, care should be taken to exclude them from Liquid Petrolatum the use of which is based on the idea of its inert character.

In addition to these possible impurities, Liquid Petrolatum may contain sulphur compounds which are frequently present in oils of a certain character. Sulphur compounds are objectionable for many reasons, in particular because they tend to prevent absorption of iron which is so necessary to proper functioning of the system. They should be eliminated from Liquid Petrolatum. Lastly the oil should be absolutely neutral.

Fortunately there are a series of very simple tests by which Liquid Petrolatum can be controlled and no oil should be used for internal administration that does not pass, first of all, the following tests which are those laid down in the 1914 edition of the British Pharmacopœia, and which will probably be followed in the ninth revision of the U. S. P.

(1) When 3 millilitres are heated with an equal volume of sulphuric acid in a test tube placed in boiling water for ten minutes and frequently shaken, the acid layer, after separation, is not darker than pale brown.

(2) A mixture of 4 millilitres of Liquid Petrolatum, 2 millilitres of absolute alcohol and 2 drops of a clear saturated solution of lead oxide in solution of sodium hydroxide (20 per cent.), remains colorless when kept at 70° C. for ten minutes.

(3) 10 millilitres of alcohol (90 per cent.) boiled with 5 millilitres of Liquid Petrolatum are not acid to litmus.

These tests insure absence of olefines and other organic impurities, sulphur compounds and acids used in purifying the oil but they do not insure absence of the substance which promotes cell growth. The researches of Ross have shown, however, that this substance, the exact nature of which is not at present known, is soluble in water and can be eliminated by washing the oil with hot water. This additional precaution should, therefore, be taken in refining petrolatum for medicinal use.

A word may be said in reference to the question of density. One of the objections to the continued administration of Liquid Petrolatum was that after a

time it had a tendency to exude involuntarily from the rectum. For this reason physicians have been demanding heavy oils, some even prescribing solid petrolatum with a view to avoiding this trouble. It has been found, however, that this involuntary evacuation was due wholly to too large dosage and occurs with heavy as well as light oils. It can readily be corrected by diminishing the dose and, therefore, as the lighter oils are more easy to take and require a smaller dose they are now used to as quite a large extent as the heavier oil. The question of dosage is one that each patient must determine for himself or herself. No hard and fast quantities can be set down. Some patients require large doses frequently, while others can obtain satisfactory results by as little as a teaspoonful two or three times a day. The usual starting dose is one to two tablespoonfuls at bedtime gradually reducing the dose as conditions improve.

Another debatable question is the time at which Liquid Petrolatum should be administered. Many physicians advise that it be given only on an empty stomach the claim being made that administering with food is liable to cause digestive disturbances as the "oil coats the particles of food and prevents action of the gastric juices."

Anyone with an elementary knowledge of physics will recognize the fallacy of this argument and the impossibility of coating moist food particles with oil. The statement that has also been made to the effect that prolonged use of the oil will coat the intestinal canal with oil and prevent absorption can be characterized as equally absurd being opposed to all known physical laws. Furthermore, the fact that the amount of oil ingested can be obtained in toto from the feces also disposes of this argument. It is axiomatic that oil and water will not mix.

Finally the question that naturally comes up just now is which oil is the best, American or Russian? The answer is that to all intents and purposes one is as good as the other for internal administration, provided it is properly refined and stands the tests before given. The American oil in general is of lighter gravity than the Russian, but is, however, of greater viscosity. American oil of a gravity of .845 can be prepared of as great a viscosity as the Russian oil of .885 gravity. This is due to the presence of higher paraffines in solution and is the reason why American oil, as at present manufactured, has no "cold tests." Russian oil remains clear at 0° C, while American oil, even the less viscous product, becomes turbid at that temperature. This does not, however, affect its medicinal properties.

In conclusion, attention is invited to the accompanying table giving the results of an examination of a series of samples obtained from manufacturing houses and from retail stores which shows that there is a great deal of oil being sold that does not come up to the requirements of a pure inert oil for medicinal purposes.

A word of advice to the retailer may not be out of place and that is to buy your oil from a drug house that has been identified with the preparation and sale of medicinal products rather than from those concerns that cater to lubricating and automobile supply houses.

SAMPLES OF MINERAL OIL OFFERED FOR SALE BY VARIOUS CONCERNS.

No. of Sample Source	S. G.	Lead Oxide Test	H_2SO_4	Color and Odor
1—Wholesale Drug House.	.840	No Color	Very Faint Color	Colorless Odorless
2—Oil Supply House.....	.851	No Color	Yellow	Fluorescent Petrol Taste
3—Mfg. Pharm. House...	.858	No Color	Dark Brown	Fluorescent Petrol Taste
4—Jobbing House.....	.847	No Color	Slight Yellow	Colorless Odorless
5—Oil House.....	.850	No Color	Reddish Brown	Strong Fluorescence
6—Retail Association.....	.857	Brown Color	Dark Brown	Yellow Fluorescent
7—Oil Refinery.....	.850	No Color	Brown, Nearly Black	Fluorescent
8—Mfg. Pharm. House....	.854	Brown Color	Dark Brown	Colorless Sl. Fluorescence
9—Wholesale Drug House.	.844	No Color	Slight Yellow	Colorless Odorless
10—Wholesale Drug House.	.848	No Color	Faint Color	Colorless Odorless
11—Oil Refinery.....	.841	Brown Color	Black	Fluorescent Petrol Taste
12—Oil Refinery.....	.847	No Color	Slight Yellow	Colorless Odorless Petrol Taste

All these samples were American oil. Sample No. 10 was an "extra heavy" oil and was almost solid at a temperature of —5° C. At +5° C. it was quite cloudy, and while the oil was very viscous, the gravity was little above that of the ordinary light oil. The viscosity was due to dissolved paraffine. Of the above 12 samples only numbers 1, 4, 9 and 10 can be considered really fit for medicinal use. Sample No. 5 is a filtered oil that has been freely sold to the retail trade.

EMETINE HYDROCHLORIDE AS AN AMEBICIDE AND HEMOSTATIC.

FRANCIS E. STEWART, PH. G., M. D., PHAR. D.

I. EMETINE HYDROCHLORIDE.

Emetine Hydrochloride, or Emetinæ Hydrochloridum, is the hydrochloride, $C_{30}H_{44}N_2O_4$, 2HCL, $2H_2O$, of an alkaloid found in *Cephælis ipecacuanha*. According to "New and Non-official Remedies," published by the Council on Pharmacy and Chemistry of the American Medical Association (see Journ. A. M. A., July 5, 1913), it occurs as a white crystalline powder, soluble in water and alcohol. The aqueous solution of emetine hydrochloride is practically neutral toward litmus. The general alkaloidal reagents precipitate emetine, even from dilute solutions. Alkalies precipitate emetine from aqueous solutions of its salts. A freshly prepared concentrated solution of ammonium molybdate in concentrated sulphuric acid (Froehde's reagent) is colored green by emetine hydrochloride.

"If about 0.10 gm. of emetine hydrochloride be dissolved in water, the solution made alkaline with potassium hydroxide, shaken with ether till nothing more is extracted, then acidified and made alkaline with ammonia water and again extracted with ether, the second ether extraction on evaporation should yield a residue which, when treated with Froehde's reagent, should not become purple.

"If emetine hydrochloride be dried to constant weight at 100° C. the loss in weight should not exceed 8 percent of the original substance.

"*Actions and Uses.*—Emetine acts similar to ipecac but is relatively more nauseating and less emetic, and causes relatively less renal irritation, but more cardiac depression. Emetine hydrochloride in the form of injections has been reported to be of especial value in amebic dysentery.

"*Dosage.*—Expectorant, from 0.005 to 0.01 gm. (1/12 to ⅙ gr.). From 0.01 to 0.02 (⅙ to ⅓ gr.) causes emesis, but cephæline is preferred as an emetic. By hypodermic injection, 0.03 gm. (½ grain)."

Amebicidal dose, in amebic dysentery, for hypodermic medication: ½ to ⅔ grain, for adults; ⅓ grain for children of about eight years of age (Rogers). Amebicidal dose, in pyorrhea alveolaris, ½ of 1 percent solution to be injected into the pockets of infection daily for at least five days, then every other day until a total of about ten treatments have been made (Barrett); ½ grain daily for three to six days hypodermically (Bass).

II. EMETINE HYDROCHLORIDE AS AN AMEBICIDE IN AMEBIC DYSENTERY.

In 1902 and 1903 Rogers* reported in the British Medical Journal the common occurrence of amebic dysentery in India, where it had not previously been recognized, and established its role as the cause of tropical or amebic abscess of

*Leonard Rogers, M.D., F.R.C.P., I.M.S., Professor of Pathology, Calcutta.

the liver, the relationship of which to antecedent bowel disease was up to then much disputed in the East.

In the course of his investigation he ascertained that ipecac has a definite specific action in the treatment of amebic disease, but is of little or no value in the bacillary type. In 1907, he demonstrated that the same drug will rapidly cure amebic hepatitis (amebic inflammation of the liver) in the pre-suppurative stage, and thus prevent the formation of amebic liver abscess if given in good time.

When analyzing a series of cases of amebic dysentery, treated with full doses of ipecac, from 30 to 60 grains a day, Rogers was struck by the fact that he had lost one-third of his cases, while another one-fourth had left the hospital uncured, declining to go on with the treatment. The great majority of his patients were either very acute or advanced chronic cases, while several died within two days of admission, being hopeless on their first arrival at the hospital. In some serious cases the good effect of the drug was very evident, but nevertheless in many it was clear that sufficiently large doses could not be administered by the mouth in time to save the graver cases. Recalling to mind Vedder's experiments in Manila with fluidextract of ipecac as an amebicide, Rogers tested the effects of the alkaloid, emetine, derived from ipecac, in the form of hydrochloride, on undoubted ameba dysenterica in the mucous stools of amebic dysentery patients, and found in a dilution of 1:100,000, that the emetine hydrochloride kills them. He therefore determined to try emetine hydrochloride hypodermically in severe amebic inflammation of the colon. The results were most remarkable and thoroughly demonstrated its superiority over ipecac as a remedy for amebic dysentery.

Rogers' brilliant discoveries were the cause of a decrease in the annual death rate from abscess of the liver in the British Army in India, to only 30 percent of its former steady number within three years, and a similar decrease in the death rate from abscess of the liver in the Calcutta General Hospital.

Until more recently ipecac did not find favor among American physicians. However, in 1909, Simon, of New Orleans, advocated its use in large doses in amebic bowel disease, and further verification of its value was furnished by the experience of Dock, Roberts, Brown, Zeiler, Allan, Lyons and other competent observers. From this time onward, ipecac and its alkaloid, emetine in the form of hydrochloride, grew in favor and became popular throughout the world. At a meeting of the Academie de Medicine of Paris on February 25, 1913, Chauffard reported a case of dysenteric abscess opening into the bronchi, in which rapid recovery took place. At a meeting of the Societe Medicale des Hopitaux of Paris on April 11, M. S. Costa reported a case of amebic abscess of the liver cured by the same treatment, but aspiration was also performed. In the China Medical Journal for March, Dr. J. Preston Maxwell reported ten cases of amebic dysentery treated with great success by injection of emetine. Later Chauffard reported to the Societe Medicale des Hopitaux de Paris another case of dysenteric abscess successfully treated with emetine. Dr. Rouget reported that he had suppressed an amebic abscess of the liver by a subcutaneous injection of emetine. Dr. Flandin reported the case of a woman who had contracted amebic dysentery

in Madagascar, and presented sometime later an abscess of the liver which opened into the bronchi and necessitated an operation. The patient was cured by subcutaneous injections of emetine hydrochloride in 0.08 gm. (13/16 gr.) doses per day.

Dr. Dopter gave an interesting account of a case of amebic dysentery which had resisted the usual methods of treatment and was completely cured by three injections of emetine hydrochloride, the first dose 0.02 gm. (5/16 gr.) and the other two in doses of 0.04 gm. (⅝ gr.) each.

Dosage in Amebic Dysentery.—Rogers, in commenting upon the administration and dosage of emetine hydrochloride in amebic dysentery, advises that solutions should be made by adding the emetine hydrochloride to previously boiled water or normal salt solution, but prefers doses put up in sterile glass ampoules ready for use. The solution should be isotonic with the blood. In the treatment of amebic dysentery, he began with one-third grain doses, equal to 30 grains of ipecac, but now uses one-half or two-third grain doses in adults, while one-third of a grain may be given with perfect safety in children of about eight years of age. He says that he has several times given as much as a grain at once, two or even three times a day in adults, and has never seen any depression or other alarming symptoms follow its use. Very occasionally, severe pain may result at the seat of injection, but this is quite exceptional, and there is usually no sign of any local reaction. Half a grain twice a day give uniformly good results, or a larger dose once a day may be used if this is more convenient.

Quite as striking is the rapidity of the cure by emetine. Thus in a series of cases, the average stay in hospital of the recovering ipecac cases was 16.4 days, and of the emetine ones 7.2 days, including one day they were kept under observation, if not urgent cases, before the treatment was begun. Further, the average number of days under ipecac before the stools became finally normal was 11.4, and the average amount of the drug given amounted to 406 grains; while the corresponding figures for the emetine treatment were respectively 2.35 days and 2 grains of the drug, equal to 180 grains of the powdered ipecac.

Diagnostic Value of Emetine Injections.—Another interesting and valuable fact in connection with the use of emetine hydrochloride in curing dysentery and amebic abscess is that the action is specific. So thoroughly specific is this action that Rogers believes that where clinical microscopic facilities are not available the response to the use of emetine is diagnostic. Where the dysenteric symptoms are not affected by a few injections of the drug, the conditions have always been found to have been due to some other cause than the ameba. The blood and mucus nearly always finally disappear from the stools of an amebic dysentery patient within two or three days, four days being the longest period he has observed. In bacillary dysentery, on the contrary, the drug exerts little or no effect, so that the failure of the emetine injections to produce a very material improvement in the stools within two or three days affords very strong evidence that the disease is not amebic in origin.

III. EMETINE HYDROCHLORIDE AS AN AMEBICIDE IN PYORRHEA ALVEOLARIS.*

Barrett, in 1914, working in collaboration with Allen J. Smith, Professor of Pathology in the School of Medicine, University of Pennsylvania, announced the discovery of the Endameba buccalis as the primary etiological factor of pyorrhea alveolaris. The report was founded upon 45 cases of suppurative affections of the gums and pericemental tissues, in all of which without a single exception, parasitic amebas were discovered in active motility.

While confident of the actual pathogenic importance of these parasites from their uniformity of occurrence and distribution and from the evidence of their ingestion of leucocytes and erythrocytes, the authors did not feel justified in attempting inoculating experiments. They applied another test for pathogenicity which seemed conclusive. Resource was had to the use of emetine, a specific against the endamebas of dysentery. Accordingly, 13 cases of pyorrhea alveolaris, or Rigg's disease, were treated locally by injecting into the pockets of infection (which in that disease occur at the margin of the gums) one-half of one percent of emetine hydrochloride. In several of these 13 cases, the pus disappeared from the pockets completely to gross inspection in twenty-four hours after application. This result was attained in all the cases after three daily local treatments.

Dr. C. C. Bass and F. M. Johns, Tulane University, College of Medicine, New Orleans, La., working independently of Barrett and Smith and without knowledge of their investigations, arrived at the same conclusions. Their first paper on the subject, "The Specific Cause and the Prompt Specific Cure of Pyorrhea Alveolaris or Riggs' Disease," appeared in the New Orleans Medical and Surgical Journal, November, 1914. Another contribution by the same authors appeared in the Journal of the American Medical Association, February 13, 1915, entitled "Pyorrhea Dentalis and Alveolaris—Specific Cause and Treatment."

Dosage in Pyorrhea Alveolaris.—Microbic invasion of the tissues of the mouth is now considered the determining etiological factor. The microbes associated with pyorrhea alveolaris are of two kinds, namely, protozoa and bacteria. Bacterial infection as an etiological factor has been recognized for a number of years. It is only within the last year that the part played by the protozoa has attained importance in the etiology of the disease. To Barrett, Smith, Bass, Johns and their co-workers, we are indebted for our present knowledge concerning endameba buccalis as a causative factor in producing Riggs' disease.

In the treatment of pyorrhea alveolaris the objects are, first, to destroy the infecting micro-organisms; second, to get rid of the pockets of infection existing between the gums and the teeth; third, to prevent re-infection; fourth, to restore the tissues to a normal condition as far as possible; fifth, to meet the indications arising from systemic infection, for it is now known that an infected mouth may infect the system, and systemic infection predisposes to lowered tissue resistance and a continuance of the local condition.

This paper only deals with the use of ipecac (and its alkaloid, emetine) which, properly employed as an amebicide, is capable of killing out the ameba buccalis.

* Paper entitled "The Protozoa of the Mouth in Relation to Pyorrhea Alveolaris," read before the Pennsylvania State Dental Society, Philadelphia, July 1, 1914, and afterward published in the Dental Cosmos for August, same year.

The employment of operative procedures is also essential to the cure of Riggs' disease, and the use of bacterin treatment may also be necessary.

Emetine hydrochloride may be used locally or systemically in the treatment of pyorrhea alveolaris. Barrett recommends its employment locally in one-half of one percent solution. Stronger solutions are apt to provoke inflammatory reactions in the gums. Care should also be taken to use a neutral salt, as free hydrochloric acid is liable to irritate the gums and adjacent surfaces. The solution should also be isotonic with the blood for it may prove irritating if used in stronger or weaker solutions.

The solution is introduced into the pyorrhea pockets by means of a hypodermic syringe, preferably with a curved, blunt-pointed, needle. Treatments which include all recognizable pus pockets, and especially parts under suspicion, should be repeated daily for at least five days, and thereafter every other day, until about ten treatments as a total have been made. Microscopic examination of scrapings from the pockets should be made from time to time for persisting endamebæ as the treatment progresses, and this, together with the general appearance of the lesions, will determine the appropriate duration of treatment. In some of the less marked and less chronic cases, a total of five or six applications or even less may be sufficient, while in the more stubborn instances, treatment may be continued even longer.

Barrett further states that coincident with the disappearance of the endamebæ, the soreness, pain or discomfort, and the amount of pus formed, rapidly decreases. The tendency to bleed from slight trauma usually ceases within forty-eight hours, and in almost all cases the patient recognizes and feels confident of the beneficial effects within a few days.

Bass and Johns find that the endamebæ may be destroyed in cases of pyorrhea alveolaris by the subcutaneous injection of emetine hydrochloride. According to these investigators the endamebæ disappeared from the lesions following from one to three days of hypodermic treatment in more than 90 percent of all cases. Injections of one-half grain up to three grains were sufficient. All cases should be treated at least three days and none need more than six. Usually one-half a grain daily for three to six days, depending upon the case and the stage of the disease, is all that is required to accomplish the purpose.

To Prevent Re-Infection.—Barrett says with truth that every unhealed lesion must be regarded as a source of re-infection which will certainly promptly occur just as long as endamebæ are being constantly thrown off from the pockets of infection. Therefore these pockets of infection should be healed and permanently abolished, first by proper operative procedures, including scaling off the tartar from the teeth (which can be greatly facilitated by the use of bifluoride of ammonium solution as recommended by Dr. Joseph Head, of Philadelphia); and, second, by the employment of emetine hydrochloride and ipecac. Bass first recommended rinsing the mouth thoroughly with a solution of fluidextract of ipecac—two or three drops to a half tumbler of water—which he believes protects against reinfection. Later he recommended the use of emetine hydrochlor-

ide dissolve in alcohol,—strength 1 to 10—one drop of which should be applied to a wet tooth brush, and used for brushing the teeth every night before retiring.

A valuable mouth wash containing ipecac to be used as a preventive of reinfection and as a cure for pyorrhea alveolaris in mild cases, to meet the suggestion of Bass may be prepared by combining the following:

Fluidextract Ipecac	8 min.
Zinc Chloride	2 gr.
Beta-naphthol	½ gr.
Solution Formaldehyde (40%)	⅓ min.
Menthol	⅛ gr.
Oil Gaultheria, q. s.	
Alcohol, 55 percent, q. s. to make one fluid ounce.	

Directions: Cleanse the teeth and gums with the solution undiluted, using a soft tooth brush. As a mouth wash, add 20 drops to about two tablespoonfuls of water.

IV. EMETINE HYDROCHLORIDE AS AN HEMOSTATIC.

C. Flandin,[1] impressed by the prompt disappearance of blood from the stools in cases of amebic dysentery treated by hypodermic injection of emetine hydrochloride investigated its action as an hemostatic in hemorrhage from the lungs. He applied the remedy by the same technic as for dysentery, injecting into the thigh 1 cc. of distilled water containing 0.04 mg. (about 5/8 gr.) of the salt. The result of the injection was surprising, the hemorrhage stopping immediately.

In about twenty cases in which this treatment was used, the hemotysis was regularly arrested, even where copious hemorrhage had been taking place but a short time before. With the exception of one case of galloping tuberculosis, the tendency to pulmonary hemorrhage seemed definitely arrested. However, in the more threatening cases he repeated the injection twelve hours later and once on the following day, and if necessary on the fourth and fifth days.

The injection causes temporary pain only in the most sensitive individuals. No disagreeable sensation was experienced, no palpitation, dizziness or nausea. In some cases there was no longer a trace of blood in the sputum, but occasionally blackish stools were present and persisted for a time.

Why does emetine arrest pulmonary hemorrhage? The reason is obscure. H. C. Wood, Jr.,[2] says: "The alkaloids of ipecac seem to have some peculiar predilection for the lungs. A number of investigators have observed areas of pallor and of intense hyperemia in the pulmonary tissue."

The effect was not due to a lowering of blood pressure, for the author's sphynmomanometric measurements showed the pressure to remain the same; nor could he detect any effect on the coagulability of the blood or the number of red cells, leucocytes, and platelets. The measure seems to be entirely harmless and has succeeded when all others have failed. In but a single case was permanent arrest of hemoptisis not obtained with emetine.

Can Emetine Hydrochloride Be Used by Mouth?—As the hypodermic method is not always convenient in practice, Rogers has tried giving one-third of a grain of emetine hydrochloride in tablets by mouth on an empty stomach, and finds that two-thirds of a grain can generally be taken without producing any material

[1] Presse Medicale, September 24, p. 777, Jour. A. M. A., November 1, 1913.

[2] Pharmacology and Therapeutics. By H. C. Wood, Jr., M. D., J. B. Lippincott Company. London and Philadelphia, 1912.

sickness and with much more favorable results than with ipecac by the mouth. However, the action is slower and less effective than by the hypodermic method, and in one patient blood and mucus reappeared in the stools after three days absence, although he had taken a total of two grains by the mouth; but all symptoms finally vanished after two more days of hypodermic medication.

Tablets of ipecac and of emetine are now used by mouth in the treatment of pyorrhea alveolaris. Bass and Johns recommend a tablet of ipecac, each representing 10 grains of the powdered drug. "One tablet three times a day does not destroy the endamebas in the mouth in many cases in a week or ten days. Two tablets three times a day destroys all demonstrable endamebas in six days or less in practically all cases. Three tablets three times a day destroy all demonstrable endamebas in from four to six days." The authors say that this tablet does not cause nausea, but there is frequently more or less abdominal discomfort and also some looseness of the bowels. However, members of the West Virginia Dental Society reported to me their experience and stated that nausea is sometimes produced by the tablets and their use must under such circumstances be dropped until the symptom disappears. Bass says that he would expect to find an individual occasionally who could not take the tablet satisfactorily and also those who would not absorb enough of the drug to destroy the endamebas on account of the diarrhea produced carrying it through the intestinal canal too rapidly.

CAN EMETINE HYDROCHLORIDE BE SAFELY INJECTED INTRAVENOUSLY?

Rogers has found that emetine hydrochloride can be safely injected intravenously in considerable doses. In one severe case of amebic dysentery he gave first, half a grain of the drug dissolved in 5 cc. of normal saline, injected very slowly into the median basilic vein, without the slightest depressing effect on the pulse, while the same evening he gave two-thirds of a grain and a day later, a one-grain dose in the same way, in addition to several subcutaneous ones. The favorable results in this case,—an extremely severe one—justifies him in advising the intravenous method in such acute attacks of amebic disease.

DO EMETINE INJECTIONS KILL ALL THE AMEBÆ AND PREVENT RELAPSES?

This question is discussed quite at length in Rogers' papers, and while, in his opinion, it is still too early to give a final answer, yet some important evidence regarding it has been accumulated, sufficient in amount to justify him in believing that this method of treatment can completely sterilize the whole of the tissues of the body as far as pathogenic amebæ are concerned, and afford good ground for hoping that at last a simple drug has been found which will absolutely rid the human system of a deadly protozoal parasite.

PROFIT AND PROFESSIONAL ADVANTAGES OF PHARMACEUTICAL MANUFACTURING BY THE RETAIL PHARMACIST.*

F. W. NITARDY.

While most of us have a natural leaning toward one or the other side of pharmacy, professional or commercial, and may find it pleasant to contemplate the practice of pharmacy in accordance with our own pet notions or ideas, there are few of us who can afford to indulge in a one-sided business just for the pleasure we may derive therefrom. We owe a duty to ourselves and our families which requires us to practice pharmacy in a manner so its pursuit will yield the profits necessary to maintain our standing in the community equal to at least that of the moderately prosperous merchant or professional man.

Pharmacy, by its development, environment and demand of the public has become a vocation that intimately combines profession and business, and it is only by the harmonious and simultaneous practice of both that we may hope to obtain the full measure of success fortune has in store for those who serve well in their chosen capacity. So closely associated are business and profession in pharmacy that it is hard to draw a line between them or neglect one without injury to the other.

Many influences have been at work in later years which have had a tendency to reduce our professional scope or activity. Our investments have been increased and our returns decreased. Expense and cost of living have been on the advance. It behooves us therefore to take good care lest we allow foreign interests to make further inroads on our calling. Not only that, but it is pertinent for us to put forth every effort and use all legitimate means to increase our field of usefulness and service as pharmacists. For, by such means only, can we successfully hold our own under the ever-growing difficulties confronting us.

Pharmaceutical manufacturing by the retailer is a field of his rightful activity embodying commercial and professional pharmacy in a manner which makes it of peculiar value to the present day druggist. It offers great opportunities and advantages: commercially, in the profit to be derived therefrom; professionally, in its elevating influence in causing the pharmacist to practice real pharmacy and exercise his skill. It is a most healthful stimulant to our business. It opens the door to greater prosperity and higher professional standing and respect. Its possibilities are far greater than any one, who has not investigated them, can realize. To some it may seem a matter of little moment.

That manufacturing, an important side of our business, should have been neglected to the extent it has, seems astonishing but if we just remember how

* From an address before Nebraska Pharmaceutical Association.

easy it is for humans to be enticed into habits that relieve us of work, even though we suffer a loss of profit and prestige by yielding to this instinct, we can readily understand how we unsuspectingly, along with the doctor, fell victims to the manufacturers' exploits and arguments professing to save us money, trouble, labor and what not. Even now, we hardly realize what has been one of the fundamental causes of some of the distressing conditions that confront pharmacy. But the object of this paper is not to discuss the causes or events that brought about present conditions, but to offer some tangible proofs that we can help ourselves to greater prosperity by doing such pharmaceutical manufacturing as can conveniently be done by the retail pharmacist. I shall endeavor to show just what manufacturing means to the pharmacist by touching briefly on the various steps, considerations and equipment involved in the successful pursuit of this work, and showing the profit as well as professional advantages to be derived therefrom.

If I succeed in interesting you to the extent of investigating the possibilities of this field of pharmaceutical industry, or cause you to leave this convention determined to increase your activity along this line and put behind it the energy and enthusiasm it deserves, I shall feel that I have been more than repaid for my effort to serve you.

THE MANUFACTURE OF OFFICIAL PREPARATIONS.

That we possess a copy of the latest edition of the United States Pharmacopœia and National Formulary is of course essential in this work. Let us consider the formulas of these works for a moment. They have been subject to much criticism, but let me tell you the greater part of it is unjustified; while there are some formulas that are not entirely satisfactory, their number is small and the trouble they offer is easily overcome. Most of the criticism has been caused by the use of improper material. All our skill is useless when we try to make fine products from poor goods; not only will the final preparation be lacking in quality but frequently we encounter all manner of unlooked-for trouble. Here are two samples of simple syrup, one made from granulated sugar and the other from Confectioners A. The latter, clean and clear, free from ultramarine blue or other coloring matter, the former is dirty, turbid and looks yellowish as soon as the blue coloring has settled out. Granulated sugar is a commercial grade—good enough for household purposes but hardly fit for pharmaceutical use. The other, because it is a highly refined article, is free from coloring or impurities. A syrup made with a cheap granulated sugar is not only difficult to clarify by filtration or otherwise (pharmaceutical syrups should be clear and brilliant whenever possible), but the ultramarine blue so frequently present in the cheaper sugars will give rise to H_2S on decomposition. This is especially apt to happen in syrups containing free acids.

Similar illustrations of differences in quality could be made by producing preparations with commercial and official alcohol, commercial and pure chemicals, oils, etc., respectively.

We must buy good, yes, the best of materials for our manufacturing department. We must buy from reliable sources, more than that, we must be able to detect bad material and watch incoming goods closely enough to see that we get what we order. At present, we can feel fairly certain that goods are true to

label but it is a good practice to occasionally apply the official tests. Especially if we have reasons to doubt the quality of a given article. We should have the equipment and ability to satisfy ourselves as to their actual worth. The apparatus required for the simple pharmaceutical testing means but a very small investment, a few dollars will cover it and the value of the practice you or your employes get in applying these tests cannot be under-estimated. It gives you a feeling of security and when jobbers and manufacturers know that you can and will occasionally check the quality of goods received, they will exercise much greater care in seeing that you are supplied with goods meeting requirements. It is rather unpleasant for them to be caught in supplying goods that are not up to standard or in conformity with the label. Furthermore, this sort of work in your store will create respect for you, both with the laity and medical profession, for they will see that you have ability beyond that of a merchant.

Let me mention a few incidents illustrating the value of such work. I had been buying oil of turpentine from the same source for a long time. It came labeled as U. S. P. Oil of Turpentine and I had verified its quality by the usual tests. One day I received a notice from the Health Department to discontinue the sale of this commodity as they had found it adulterated. I immediately tested my stock and found that it was all right, so I wrote a courteous letter to the Health Department, stating that I had received their notice but that they were evidently in error as the turpentine I was selling was strictly U. S. P. A day later I met the State Chemist, who told me that he had examined many samples of Oil of Turpentine lately, and found none that were pure. He mentioned that he had relied entirely on the Sulphuric Acid Test of the U. S. P. I could see wherein he made his error as this test is faulty or may at least be misinterpreted by not being given in sufficient detail. I did not say much, but collected data from reliable authorities, principally from phamphlets published by the Department of Agriculture, showing wherein the test was deficient and then called his attention to this information. Shortly after an apology was offered, for the officials realized that they were mistaken.

Another incident was in regard to hydrogen peroxide. I had been buying from one firm but occasionally found their product below strength, and after several complaints discontinued my purchases. They then investigated the matter more thoroughly and were very much surprised to find that the fault lay with their chemist who was very careless in testing the product. The firm in question were manufacturers.

The necessity of watching the labels was brought to my attention when on ordering a pound of U. S. P. hypophosphorous acid I received the product of a very well known, and generally considered reliable manufacturing house, labeled "Hypophosphorous Acid," and in small type in one corner of the label appeared the note: "If this acid is neutralized with ammonia water, a turbid mixture will result which on filtration will yield a precipitate with Barium Chloride Test Solution." The U. S. P. requires that hypophosphorous acid shall do neither, but unless one is familiar with the tests for purity of this article, such statement on the label might easily be overlooked and hence also the fact that the product was not suitable for pharmaceutical use.

To get back to where I left off. Next in importance to buying good goods

and seeing that they comply with official requirements, is the process of production. Herein we should adhere strictly to the official formula unless the latter will under no circumstance produce a satisfactory product. This is necessary for several reasons. In our own opinion we may be able to improve on the official process, but others who are just as capable and qualified to pass judgment on these matters as we, may not agree with us. Uniformity is one of the most important points and uniformity in official preparations is out of the question unless everybody prepares them in accordance with official standards. As an illustration let me mention tincture of nux vomica. The official process calls for making this preparation by dissolving 20 grams extract of nux vomica in sufficient alcohol and water to make 1000 cc. of tincture. This makes a rich brown colored liquid. I know that some pharmacists make this preparation by diluting a fluidextract with sufficient menstruum. By this method a straw-colored liquid is obtained which further differs from the official tincture in containing a small amount of acetic acid introduced by the fluidextract.

A point frequently overlooked is the attention that should be given to the storage of our preparations, for it is quite important to protect sensitive products from the detrimental influences of light, air and temperature. Many excellent preparations have been spoiled or damaged by improper care in storage. When the Pharmacopœia states that a preparation, as for instance, spirit of nitrous ether, should be kept in *small, well-corked amber bottles* in a *cool place,* there is a good reason for keeping it this way. It deteriorates rapidly unless so kept. There is little difference between the pharmacist who prepares a substandard product and the one who permits a good product to become substandard through carelessness. In either case when such a product is dispensed, an injury is done to the patient, physician and pharmacy at large.

To be equipped to make the various preparations does not require a large outlay for apparatus. You need a number of percolators; some graduated receiving jars, these may be home-made, from candy jars or wide-mouth bottles; some porcelain evaporating dishes; flasks and funnels. Your prescription graduates and mortars will also serve in your manufacturing department. You should have a set of metric weights so as to save converting your formula into the apothecaries system and when once used you will find it the most convenient by far. Retort stands and steel rods fastened to shelves in your back room are very convenient to hang funnels and percolators. A filtering rack with adjustable shelves is desirable if space is available. Further necessities are thermometers; oven, water bath; tin, glass or rubber covers for funnels; scales beakers, spatulas, glass rods, etc. Earthenware crocks are quite handy as mixing vessels. Old glass stoppers will serve for percolator weights. In fact many little ideas will suggest themselves to you in carrying on the work that will save time, material and apparatus.

In making your preparations it is very desirable to have printed blanks, to be used for writing out your formula. Such a system prevents errors, saves your books and gives you a permanent record. All notes and other information, such as the amount of menstruum used in a percolation operation, notes on how troublesome points may be overcome, etc., should be made on the back of these blanks for future reference. These blanks should be numbered and filed like

COST CHART.

Preparation	Quantity	Cost				Equivalent to	[2] Manufacturers' Charge			Saving	
		Materials	Time	Overhead	Total		A	B	C		
Aromatic Elixir, U. S. P.	1000 cc.	.30	.25	.05	.60	.29 pt.	.45 pt.	.42 pt.	.36 pt.	.07	.16 pt.
Aromatic Elixir, U. S. P.	4000 cc.	1.14	.25	.14	1.53	1.47 gal.	2.47 gal.	2.40 gal.	2.40 gal.	.93–	1.00 gal.
[1]Aromatic Elixir, U. S. P.	20000 cc.	5.07	.35	.54	5.96	1.09 gal.					
Elixir Cinchona, N. F.	4000 cc.	1.49	.35	.18	2.02	1.91 gal.	3.15 gal.	2.55 gal.	2.40 gal.	.49	1.24 gal.
Elixir Terpin Hyd., N. F.	4000 cc.	2.39	.35	.27	3.01	2.85 gal.	5.17 gal.	4.80 gal.	3.60 gal.	.75	2.32 gal.
Camphor Liniment, U. S. P.	4000 gm.	1.54	.25	.18	1.97	.23 pt.	.72 pt.	.50 pt.	.50 pt.	.27	.49 pt.
Soap Liniment, U. S. P.	4000 cc.	2.64	.50	.31	3.45	.41 pt.	.....	.60 pt.	.50 pt.	.09	.19 pt.
Comp. Glycyrhiza Mixt., U. S. P.	4000 cc.	.95	.50	.15	1.60	1.51 gal.	2.70 gal.	.....	.60 pt.	1.19	3.29 gal.
Syrup of Hydriodic Acid, U. S. P.	1000 gm. (850 cc.)	.39	.10	.05	.54	.32 pt.	.54 pt.	.48 pt.	.45 pt.	.13	.24 pt.
Syrup of Ferrous Iodide, U. S. P.	1000 gm.	.58	.50	.11	1.19	.53 lb.	.63 lb.	.55 lb.	.55 lb.	.02	.10 lb.
Comp. Syrup of Phosphates, N. F.	4000 cc.	2.48	.50	.30	3.28	3.10 gal.	5.17 gal.	.....	.....	2.07	gal.
Tincture of Capsicum, U. S. P.	1000 cc.	.79	.25	.10	1.14	.54 pt.	.86 pt.	.93 pt.	.72 pt.	.18	.32 pt.
Tincture of Nux Vomica, U. S. P.	1000 cc.	.73	.15	.09	.97	.46 pt.	.81 pt.	.72 pt.	.60 pt.	.14	.35 pt.
Comp. Tinct. of Gentian, U. S. P.	4000 cc.	2.15	.50	.26	2.91	2.75 gal.	.65 pt.	4.00 gal.	.51 pt.	1.25	2.45 gal.
[3]Comp. Resorcin Ointment, N. F.	1000 gm.	.75	.50	.12	1.37	.62 lb.	1.08 lb.	1.25 lb.	1.50 lb.	.46	lb.
Sulphur Ointment, U. S. P.	500 gm.	.21	.15	.04	.40	.36 lb.	.86 lb.		.60 lb.	.24	.50 lb.
		23.60	5.45	2.89	31.94		58.88	54.71	55.46	24.41	
		74%	17%	9%	100%		[4] Average, $56.35.				
				57%				100%		43%	

[1] Three quantities are given to show difference in cost in varying quantities.

[2] Manufacturers' charges: A represents one class of manufacturers, B another class, and C a manufacturing jobber. Wherever possible price for bulk quantities corresponding to manufactured amount are mentioned. In a few instances the preparations were not listed by some class of manufacturers.

[3] Price of B and C are for preparations of similar nature, but not in compliance with official formula.

[4] In arriving at the totals, quantities equivalent to the manufactured amount were figured and in case the preparation was not listed, the lowest competitive figure was used as a basis.

you do prescriptions. Such records will prove of much value. They should show, aside from the formula and directions, the cost of material, the time required to make the preparation, date and by whom made. If a card index is kept with a card for each preparation made, showing date, serial number of formula record, quantity made, cost of material, time, overhead and total cost, you will have all the information you may want in regard to any of your preparations. On a moment's notice, you will know just how much of each product you are using and what it costs you. Such a record system may seem complicated on first thought, but it takes very little time to keep it up.

I have prepared a chart showing what it costs to manufacture a few of the commonly used official preparations, using several classes and basing this cost on the cost of material, fifty cents an hour for the time required to produce the product and a further charge for overhead expense at 10 percent of the total. This chart also shows the prices charged by manufacturers for these same products, when bought in similar quantities. In all instances you will note there is a saving. Similar showing can be made on almost any preparation that can conveniently be produced in a drug store. The saving of money, however, is not the whole story. By making these preparations yourself, you can gain advantages worth more than the money you make. You gain arguments and talking points, with which to back up your prescription service and propaganda work, that would not exist for you otherwise. You will have a broader knowledge of and greater confidence in these preparations, factors that will prove a valuable asset. Your preparations will be better than those you can buy and the fact that you produce them, instills respect and gives you professional standing with the public and the medical men.

There are still other advantages worth considering, such as your increased buying power of crude materials used in manufacturing, which you would carry in more limited quantities in case you did not engage in this work.

For many pharmacists the cost of time and overhead expense included in the costs on the chart we shall now consider, is profit, for their pay roll and general expenses would not be decreased by refraining from making their own preparations, for the time devoted to this work would frequently be wasted, and rent, light, taxes, etc., would remain the same.

COST CHART.

You will note that on the preparations mentioned on the chart your investment in making them yourself would be $23.60, as compared with an average of $56.35 in case you buy them ready made. By paying yourself $5.45 for time and $2.89 for general overhead expense, you have a total of $31.94, representing but 57 percent of the cost of the same materials bought from the manufacturers, while your cash investment is but 42 percent of the same. In other words, not considering the above mentioned advantages of manufacturing, and figuring your time and overhead expense into the cost of your preparations, you still make a profit of $24.41 on a total cost of $31.94. What other department in your store can make such a showing?

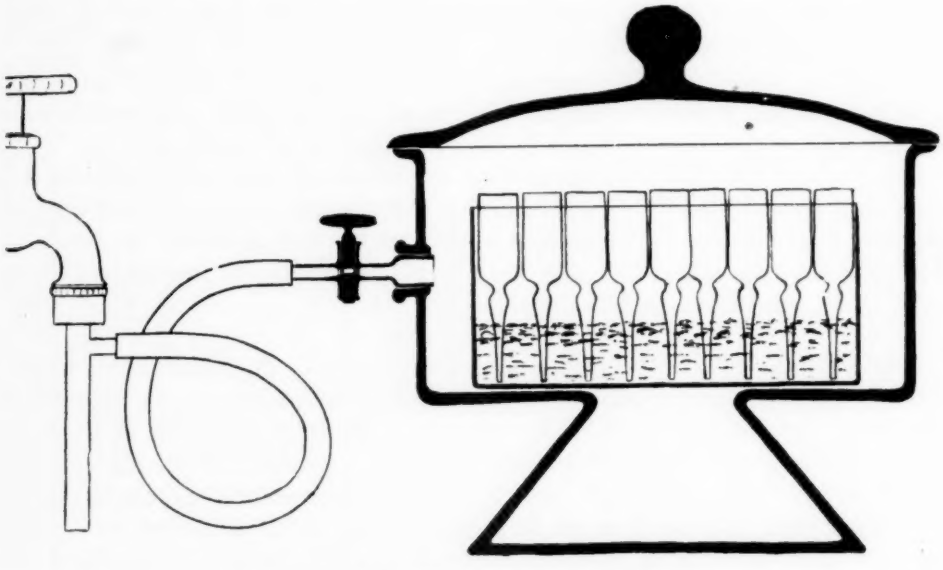
SPECIAL WORK FOR THE PHYSICIAN.

Hand in hand with the production of official preparations goes the special work you can do, such as the making of culture tubes, microscopic stains, test and

volumetric solutions for the modern physician who takes advantage of bacteriology and physiological chemistry as an aid to diagnosis, yes, practically relies on them. He needs various reagents for testing stomach contents, body secretions, etc., the preparation of which can be made a source of profit for the pharmacist. Physicians appreciate such service greatly. The opportunity along this line depends, of course, entirely on the kind of physicians in your vicinity. Practically all of the younger men value such service and many of them who are not using this class of preparations now, would avail themselves of this service if they knew it was obtainable.

The Pharmacopœia and reference works on pharmacy, chemistry and bacteriology give you formulas and information on this work. With the application of a little thought and energy, a profitable business along these lines can be created in many communities.

Another line of very profitable work for the pharmacist is the preparation of sterile solutions, intended for hypodermic and intravenous use. Direct medication is daily growing in favor with the medical profession and to make the introduction of medicinal substances into the blood or tissues of the body safe and free from unpleasant after affects, it is very necessary to have these products sterile. Sterile solutions in individual doses, dispensed in ampoules, have a decided advantage over the old hypodermic tablet and the modern physicians are rapidly becoming familiar with this fact. Empty ampoules may be bought quite cheaply and are easily filled, if you will equip yourself for this class of work.



Vacuum Apparatus for Filling Ampoules.

I have made a drawing, showing an inexpensive and very efficient vacuum apparatus, which I will explain herewith. Ampoules usually come with long sealed necks, clean on the inside. They are first washed outside, then the necks are cut to a uniform length and the so prepared ampoules are then placed right

side up in a flat bottom glass dish. A slightly smaller dish is inverted over them and then by inverting the whole, the ampoules will stand, necks down in the second dish. The amount of solution required to fill the number of ampoules contained in the dish is then placed in same and the whole placed in a vacuum desiccator. The air is exhausted, and then slowly allowed to enter the apparatus again. In this way the ampoules will draw up the entire amount of liquid. The dish is taken out of the desiccator inverted and the ampoules are now ready for sealing and sterilizing. In most cases it is desirable to place the unsealed ampoules in a sterilizer for a few minutes previous to sealing. The condensation of a small amount of steam in the necks of the ampoules will wash them and consequently prevent the charring of the substance, which would otherwise adhere to the necks. If they are sealed warm, there is also less danger of breakage in sterilization by heat, especially if they are sterilized by boiling in water.

Sterilization may be accomplished either by placing the filled and sealed ampoules in a dish of preferably colored water and boiling them for twenty to thirty minutes or by sterilizing them in an auto-clave, with steam under pressure. The latter has the advantage of creating as much pressure around the outside of the ampoule as is formed in the ampoule, thereby preventing unequal pressure which usually causes some breakage.

Some products of course will not admit of sterilization by heat, and in such instances the solutions may be filtered through a germ-proof filter and then filled into previously sterilized ampoules under aseptic conditions.

Ampoules of course are not the only safe container for sterile solutions. When large quantities of bulk solutions are dispensed, glass stoppered bottles are frequently preferable. Rubber caps such as are used by manufacturers of vaccines, form a convenient seal for a bottle of sterile solution intended to be used a little at a time. These rubber caps permit the physician to withdraw a portion of the sterile fluid with a hypodermic syringe by puncturing the rubber cap with the needle. After withdrawing the needle, this puncture closes itself, the solution remaining sterile as long as care is taken in using a sterile syringe and needle for withdrawing the solution.

You can achieve a good reputation amongst your medical friends by specializing on the production of certain preparations in a manner that will provide them with products of higher quality than those ordinarily supplied.

As an illustration I will mention ointment of yellow mercuric oxide. This preparation as ordinarily made is produced by triturating a dry mercuric oxide with an equal quantity of water and incorporating with this mixture lanolin and petrolatum or some other ointment base if desired. As you know, ointment of yellow mercuric oxide is used almost exclusively as an eye remedy. For that reason freedom from grittiness is of great importance and the finer the division of the oxide, the better the ointment you dispense.

A preparation that is far superior to one that can be produced from dry oxide can be made by precipitating the mercuric oxide from dilute solutions, washing, collecting and preparing the ointment from the moist precipitate. The preparation made in this way will contain particles of mercuric oxide so small that they are invisible when examined under a high power microscope.

It would of course be useless to prepare a very fine ointment and then dis-

pense it in a container that would subject it to contamination with dirt and dust as would be the case, if dispensed in an ordinary ointment jar. For that reason it is desirable to dispense an ointment of this kind, in a collapsible tube which is an absolute safe-guard against foreign substances accidentally becoming mixed with it. These tubes of course should be coated with a tolu varnish or other suitable medium that will prevent contact of the mercury salt and the metal.

Doctors who do their own dispensing should not be looked upon as competitors, although it is true they are in a sense, but their good will and friendship should be cultivated, as they require drugs and pharmaceutical preparations, with which you can furnish them if you will make an effort to get this business. While it may not net you the profit that you could derive if they were prescribing instead of dispensing and you could fill their prescriptions, you will nevertheless find that their business is worth while, if you can handle it on the proper basis. Aside from the dispensing physicians there are dentists, veterinary surgeons, beauty doctors and possibly others for whom you can produce various preparations profitably.

The larger your output of pharmaceutical products the greater will be the profit on the manufacturing end of your business.

THE MANUFACTURE OF TOILET GOODS, ETC.

Just as profitable, instructive and ethical as the manufacture of official preparations, etc., is the manufacture of toilet goods, simple household remedies, flavoring essences, food colors and other pure food products, as well as household utilities, such as cleaning fluids, furniture polish, insect destroyers, etc.

Formulas for this class of products may be found in the various formularies and reference books, as well as in the monthly trade journals, of which there are many excellent ones.

While speaking of reference books, I believe the average pharmacist does not make sufficient use of or use a sufficient assortment of such works. Every pharmacist can well afford to invest fifty to one hundred dollars in general works on pharmacy, formularies, reference works on chemistry, botany, bacteriology, aside from subscriptions for journals and Association dues, all of which are necessary means to keep one in touch with the constant progress. You will find it true almost without exception that successful men are well posted on all phases of their business and you will find that their greatest aid in keeping posted is their connection with national, state and local associations, the personal contact with men of affairs in their line afforded by such gatherings as these and the journals and reference works that do not serve as ornaments, but are read and consulted at every opportunity. In cities where local associations exist with a considerable membership, a great service is rendered if such organizations own a pharmaceutical library. In this connection I would like to say that such a library was started by the Denver Branch of the American Pharmaceutical Association in Denver a little over a year ago and we now have a reference library of approximately five hundred volumes covering practically every phase of pharmacy from merchandising and window decorating to works on bacteriology. This library was established without a great deal of expense and is proving a great help to the druggists of our city.

To resume, you will probably find that most of the formulas in the form they are published will not produce preparations entirely to your liking. We usually have our own ideas as to what this or that preparation should be and different classes of products are demanded in different localities. For that reason a little experimental work is usually necessary to perfect the preparations. Before such work is attempted, however, all reference books at your command should be consulted, and every formula for preparations of the nature or class you are trying to produce should be studied. The various hints and formulas that you will find will be of great help to you and offer many suggestions which with your practical knowledge of pharmacy will make the work of producing a satisfactory preparation, comparatively easy.

Whenever possible try to be original in your preparations. That is, your product should not suggest itself as an imitation of something already known. It should at least be an improvement over what is on the market. Individuality is always an asset.

As in the manufacture of your pharmaceutical products, it is quite essential to use the best of materials in their production. It is time enough to consider the cost when you have your formula established; you can then adjust your package and retail price so as to give you the proper margin.

With toilet preparations especially, the package is a very important factor and considerable care, thought and judgment should be used in designing it. Here, too, it is desirable to lend your package individuality. Hand lotions, creams, etc., should be well scented. Such toilet preparations as combine cosmetic properties with medicinal value should be prepared so that both points are properly taken care of. A hand lotion should have aside from a pleasant appearance, attractive package and nice odor, the medicinal quality necessary to make it a satisfactory product, so far as curing and preventing chapped skin is concerned. It should also be pleasant to use. That is, it should not be sticky, greasy, or in any other way objectionable. Any one doing or expecting to do prescription business and keep on good terms with the medical profession should not attempt to market cure-alls for every imaginable ailment. Any sensible physician will not object to household remedies such as are called for by the public for minor ailments for which physicians would not be consulted any way. But I believe that it is not within the province of the pharmacist to market dyspepsia or rheumatic cures or any preparation for the treatment of diseases or conditions properly requiring the attention of a physician nor imitate the frequently fraudulent proprietaries on the market.

A certain amount of advertising will be necessary to place your products along these lines before the public. Of printed advertising, I believe circulars or small pamphlets are the most effective. If these are gotten up in original style, are truthful and well distributed, you may be quite certain of results. One should avoid negative assertions in advertising and not be afraid to give proper publicity to all of the good qualities of the product. Of great value are window and counter displays. A great deal in fact can be said on the merchandising end of these lines but this is not within the scope of this paper.

A COLLEGE OF PHARMACY PRESCRIPTION ROOM.

ALBERT H. DEWEY, PH. G., M. S.

Prescription work is probably the most scientific of all the work a pharmacist does in the drug store. In a sense it may be considered the keystone of the arch of pharmaceutical education since many of the other subjects are included in the curriculum to prepare the student for a proper understanding of this subject.

Because of the high character of this work both in college and in the drug store, the equipment of a prescription room in which the student receives his practice in the dispensing of prescritptions is a matter of the first importance. Since, according to my idea, the prescription room at Purdue University satisfactorily fulfills the purposes for which it was designed, a brief description of it might be of interest to the readers of the Journal.

This department occupies a corner room fourteen by eighteen and a half feet, having one east and two south windows. It is heated from an office room below by a register in the floor in order to save the space that would otherwise be occupied by a radiator. Two corner sinks, in opposite corners of the room, afford a means for washing utensils, containers, etc. Distilled water is supplied by siphons from large bottles conveniently located on top of the cases. Hot distilled water is also available, being supplied by a block-tin lined copper tank fitted with a faucet, and heated by an ordinary bunsen burner.

The furniture of the room consists of five prescription cases, one labeling desk,

Prescription Room, Purdue University School of Pharmacy, Lafayette, Ind.

and one Schwartz Sectional cabinet. The prescription cases and labeling desk were manufactured according to blueprints and specifications furnished by the Purdue School of Pharmacy. The prescription cases are of Indiana quarter-sawed oak, nine feet long by twenty-one inches wide, and have plate-glass work-tops inlaid on green felt. Below the work-top of each case are three cupboards for the larger apparatus, closed by roll doors, and a number of drawers for smaller utensils, containers, etc., while above the work-top are three sections of adjustable shelves on which are kept in regular shelf bottles the chemicals, powdered drugs, and liquid preparations of the U. S. Pharmacopœia. The labeling desk is of the same material and construction, six feet long by twenty-one inches wide and of a height convenient for use while standing. This desk has two cupboards closed by roll doors and numerous drawers in which are stored the surplus stock of labels, apparatus, and containers for use in this room.

The sectional cabinet is utilized for small and irregular containers, original bottles of alkaloids, volatile oils, etc., and the proprietaries usually kept in stock.

Each kind of work is performed at a desk especially equipped and fitted for that kind of work only. For example, suppositories are made at the suppository desk which, in addition to the necessary mortars, slabs, spatulas, etc., has a disappearing suppository machine, casseroles for melting suppository masses, rectal, infant, vaginal, and urethral molds, and in fact everything that could possibly be required in the extemporaneous preparation of suppositories. The same is true throughout the room, a specially equipped desk being used for each of the following classes of preparations: Suppositories, elastic capsules, infusions and decoctions, powders, cachets, capsules, collyria and nebula, hypodermics, solutions, mixtures, emulsions, ointments, tablet triturates, troches and pastils and pills.

Each nine-foot desk is designed for the use of two students ordinarily, or three if necessary. Thus it will be seen that fifteen students can be accommodated in this room at one time, surely as great economy of space as is practical in the drug store. In fact, conditions in the drug store have been kept in mind in fitting up this room rather than the ordinary laboratory plan for pharmaceutical or chemical work. Here, if no-where else, "Cleanliness is next to Godliness." The student is assigned to a desk for one day's work only. He finds it in good order and scrupulously clean, and he leaves it as he finds it, the apparatus being checked and inspected after each day's work. This necessitates the work of the course being done progressively instead of simultaneously, and it provides a maximum of equipment at minimum of cost.

The plan of equipping the room and carrying on the work of prescription dispensing is as nearly as possible the plan that would be followed in equipping and operating an exclusive prescription store to work fifteen clerks.

The containers used for the dispensing of the finished prescriptions are the best that can be procured. Hinged lid pill and powder boxes, partitioned boxes lined with tinfoil for suppositories, collapsible tubes as well as opaque glass jars for ointments, glass jars with perforated tops for dusting powders, are typical examples.

It has long been the belief of the writer that prescription work cannot be too

well or too elegantly done and that, in the student's practical work in this subject while in college, too much emphasis cannot be placed upon either the thoroughness of the work or the beauty and elegance of the finished product.

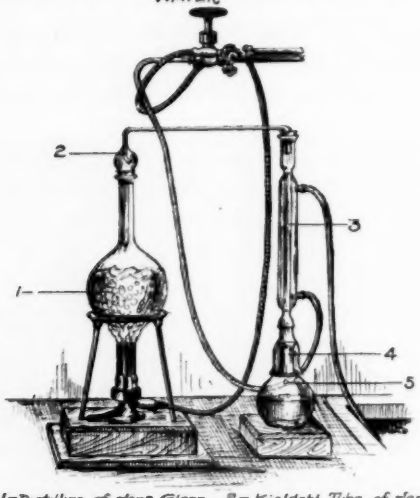
The graduates of colleges of pharmacy should never meet in any drug store better or more elegant dispensing than they have been taught and required to do in college; they should be accustomed to the use of the best materials, utensils, containers, in short the best of everything. They should be masters of the highest class of compounding and dispensing and trained in no other kind, for it is to these college-trained men that pharmacy must look for its ideals and its uplift in the years to come.

REDISTILLED WATER VERSUS STERILIZED DISTILLED WATER.*

WM. GRAY.

Pharmacists should be cautioned against using boiled distilled water as a substitute for redistilled water. Distilled water, as ordinarily handled, not only contains traces of metal and ammonia, but bacteria as well. Boiling such a specimen does not remove any bacteria that may be present, but killing them

APPARATUS FOR PREPARING REDISTILLED WATER.



1-Distilling of Jena Glass. 2-Kjeldahl Tube of Jena Glass 3-Vertical Condenser 4-Hood (for protection against dust and microorganisms 5-Receiving Flask of Non-Sol Glass

produces a suspension of them, which, when administered intravenously, acts like a vaccine. Chills, temperature and other complications often result from using water of this kind. This is neither desirable nor necessary, as the difficulty is easily overcome by redistilling the water in hard glass, such as Jena or Non-Sol. The water should be *aseptically* cared for, and used within an hour

* Read before Chicago Branch, A. Ph. A., May 18, 1915.

after redistilling. For this reason the aqua distillata sterilisata of the next pharmacopœia is open to the same criticism, since unless the freshly distilled water is *collected aseptically,* the subsequent boiling to sterilize it will as likely produce a vaccine as when made from an older distilled water, only in a lesser degree.

Here we have an apparatus that is inexpensive and does the work. Pharmacists should get busy if they want to meet the demands of up-to-date practitioners, who require *freshly distilled* water for preparing or having the pharmacist prepare salvarsan, physiological salt and other solutions for intravenous use.

If one cares to put up ampoules wherein such water is always used as a solvent, I think it will pay to do so—if not directly, then indirectly, in added prestige with physicians who direct their prescriptions towards your establishment. Examples of such ampoules are sodium cacodylate, a substance which has almost superseded Fowler's and Pearson's solutions in chorea and anemia—iron and arsenic are used particularly in pernicious anemia. Emetine hydrochloride in amebic dysentery and pyorrhea has brought wonderful results, and as a consequence, the price of ipecac is soaring. There are too many substances used in ampoule form to mention all—I simply call attention to the above medicaments because the demand for them is increasing.

The technique necessary for this work is to use sterile utensils. Ampoules must be of hard glass, either Jeno or Non-Sol. *Hard glass is very essential,* soft glass being more or less soluble, especially when sodium chloride is used to make the solution isatonic, the powerful sodium and chlorine ions acting on soft glass. Solutions must be neutral. Ampoules may be filled by using a burette with rubber connection with glass tube drawn to a fine point or with a hypodermic syringe. The filled ampoules should be heated to the boiling point before sealing in the flame, so that they may be placed in boiling water for thirty minutes each day, for three successive days.

A METHOD FOR THE DETERMINATION OF CARBON DIOXIDE IN BAKING POWDER AND CARBONATES.*

H. W. BRUBAKER.

The following is the result of an attempt to devise a method for the determination of the available carbon dioxide in baking powders, which is simple in principle, requires an apparatus easy to construct, and manipulate, consumes little time and gives reasonably accurate results. The method was devised for the use of a class of girls in household chemistry. It is adapted not only to the determination of carbon dioxide in baking powder but also in carbonates, bicarbonates and minerals such as limestone and dolomite.

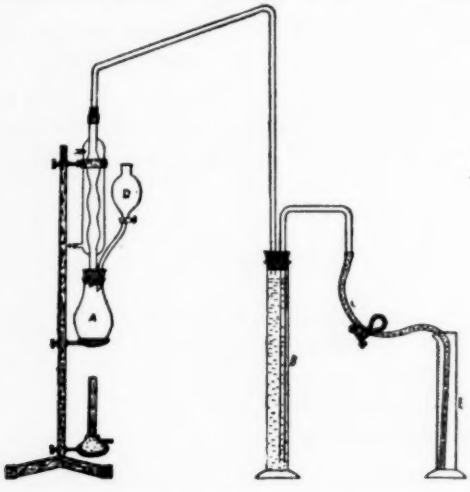
The principle of the method, in brief, is the liberation of the carbon dioxide,

*From Journal of Industrial and Engineering Chemistry, May, 1915.

causing it to displace its own volume of a saturated solution of sodium chloride into a graduated cylinder and measurement of the volume of the solution displaced. A saturated solution of salt is used because carbon dioxide is not readily dissolved in it and tests show that under the conditions of the experiment the amount of absorption is so small that it may be neglected. A saturated solution of salt is also used, instead of water, in the decomposition of the baking powder. The principle of collecting carbon dioxide over a saturated solution of sodium chloride is used by Jago in determining the strength of yeast.

PROCEDURE.

One gram of the baking powder is placed in the flask *A*. Water is circulated through the condenser for several minutes. The cylinder *B* is nearly full and the delivery tube *C* is full, to the open end, of a saturated solution of salt, the pinch clamp being closed. The stopcock in the funnel *D* is now closed and exactly 25 cc. saturated solution of salt placed in the funnel. The pinch clamp on the delivery tube is now opened and the salt solution run in from the funnel by opening the stopcock, care being taken not to admit any air. The carbon dioxide begins to be liberated at once and the salt solution is driven over into the graduated cylinder *E*. The decomposition of the baking powder is completed by heating with the gas burner until the solution has boiled for two or three minutes or until the rise of the salt solution in the cylinder *E* is seen to have stopped. The flame is then turned out and the apparatus allowed to stand until it has cooled to room temperature again. The cooling of the flask *A* can be hastened, if desired, by lowering the ring and bringing a beaker of cold water up under the flask until it is immersed in the water. When the apparatus has reached room temperature the salt solution in *E* and *B* is leveled up by raising *E*. The pinch clamp is then closed; the cylinder *E* is lowered to the table, the delivery tube removed and the volume of salt solution in *E* read. Subtract 25 cc. from this volume to compensate for the 25 cc. of salt solution which were run into the flask *A* to decompose the baking powder. Correct the remaining volume to 0° C. and 760 mm. pressure. As 5.1 cc. of carbon dioxide gas at 0° C. and 760 mm. pressure weigh 0.01 gm., which is one percent of 1.0 gm., the percent of carbon dioxide in the baking powder may be found by dividing the corrected volume by 5.1.



NOTE: In making the correction for aqueous tension I have used that for pure water which is two or three mm. too high in each case. The effect of the small error thus introduced into the results here recorded is to make them too low.

RESULTS.

The purpose of the condenser in the apparatus is to prevent any water from distilling over into the cylinder *B* and thus diluting the salt solution. Table I shows some results obtained with various baking powders:

Table I—Analyses of Baking Powders for CO_2

Sample Baking Powder	Vol. CO_2 cc.	Temp. ° C.	Barometer mm.	Percent CO_2
Royal A 1	65.0	20	740	11.30
2	66.0	20	740	11.47
Royal B 1	66.4	21	742	11.43
Calumet A 1	78.3	22	740	13.47
2	77.9	23	740	13.34
Calumet B 1	82.0	29	745	13.69
K. C. 1	65.0	24	745	11.14
2	64.5	25	745	11.02

In order to ascertain whether an appreciable amount of carbon dioxide is absorbed by the salt solution during a determination, 90 cc. of carbon dioxide were run into the apparatus at 22° C. and 740 mm. and allowed to stand two hours and forty minutes, at the end of which time the volume was 90.3 cc. and the temperature 23° C., the pressure having remained the same. The increase in volume is very close to that which would result from the increased temperature.

In applying this method to the determination of carbon dioxide in carbonates such as sodium carbonate and precipitated calcium carbonate the sample was decomposed by means of a dilute solution of hydrochloric acid which was saturated with sodium chloride. The absorption of carbon dioxide by the acid solution is appreciable and must be allowed for. This is done by decomposing one sample with 10 cc. of the acid solution, then running a second determination, using 15 cc. of acid. The difference in the amounts of carbon dioxide obtained in the two cases being due to the absorption by 5 cc. of acid solution, the proper correction is made on either determination. When decomposing precipitated carbonates with hydrochloric acid no heating is necessary, hence the time consumed in each determination is very short, but two or three minutes being required for the liberation of the carbon dioxide. In running two samples of calcium carbonate in this way, the whole process, including the weighing of the samples, required only ten minutes.

Table II shows some of the results obtained on carbonates. In Determinations 1 and 2 heat was used. In Determination 3 no heat was used. The sample of sodium carbonate used in Determinations 4 and 5 was found to contain 4.46 percent of moisture. The theoretical amount of carbon dioxide in this sample is therefore 39.65 percent. Some of this sodium carbonate was now dried and Determination 6 made upon the dry sample with the result shown. Allowing for the same absorption as in Determination 5, which is 2.97 cc., gives a total volume of 121.17 cc., under the above conditions of temperature and pressure which correspond to 41.38 percent of carbon dioxide.

Determination 7 was made on a sample of limestone. It was necessary to use heat to completely decompose the sample with the acid solution. I had no gravimetric determination of carbon dioxide in this limestone against which to check the result. However, according to the figures of another analyst, the limestone contains 12.28 percent SiO_2, 1.15 percent $Al_2O_3+Fe_2O_3$, 46.74 percent

CaO and 1.38 percent MgO, making a total of 61.55 percent, which leaves for carbon dioxide 38.45 percent. This makes no allowance for potassium and sodium which may be present in very small quantities. The result is undoubtedly a close approximation to the actual percentage of CO_2 present.

Table II—Analysis of Carbonates for CO_2

Detn. No.	Sample	Wt. taken gm.	Decomposed by cc. acid	Vol. CO_2 cc.	Temp. °C.	Bar. mm.	Percent CO_2 Found	Theoretical
1	$CaCO_3$	¼	5	62.5	23	737	43.98	44.00
		¼	10	61.0	25	737		
2	$CaCO_3$	¼	3	64.0	24	739	43.88	44.00
		¼	8	63.5	25	739		
3	$CaCO_3$	½	8	127.0	25	735	43.98	44.00
		½	13	124.65	25	735		
4	Na_2CO_3	½	7	116.0	25	734	39.95	39.65
		½	12	113.88	25	734		
5	Na_2CO_3	½	7	116.0	25	734	39.95	39.65
		½	12	113.88	25	734		
6	Dry Na_2CO_3	½	7	118.2	24	742	41.38	41.50
7	Limestone	½	10	111.5	25	744	38.18	38.45 (*a*)
		½	15	113.5	28.3	742		

(*a*) By difference; see text.

NOTE: Since sending this paper for publication I have found a convenient way of obviating the necessity of making a correction for the absorption of carbon dioxide in those cases where the sample is decomposed by dilute acids. This makes it unnecessary therefore, to decompose more than one sample of the substance for one determination. The procedure is as follows: Just before making the determination pour 30 or 40 cc. of dilute hydrochloric acid (1 acid : 3 water) on 0.5 gm. of precipitated calcium carbonate. When the effervescence has ceased, and the acid solution has become clear, pipette 10 cc. of this into the bulb of the separatory funnel and proceed with the determination. This method of saturating the acid with carbon dioxide requires but a moment and makes it unnecessary to correct for any absorption whether the sample is decomposed by heating or at room temperature. The following determination will illustrate the accuracy of this method of procedure:

Wt. of limestone taken	0.5 gm.
Volume of salt solution displaced	138.18 cc.
Temperature, 22° C. Barometer	739 mm.
Volume corrected to 0° C. and 760 mm	112.3 cc.
Percent CO_2 found	44.03
Theoretical percent CO_2	44.00

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SCHUESSLER'S TWELVE TISSUE REMEDIES.*

FREDERICK J. WULLING.

Because I have had numerous inquiries of late from pharmacists and physicians concerning the twelve tissue remedies, it occurred to me as quite probable that many pharmacists of the state are not familiar with them and that a brief reference to them would be acceptable. Because these remedies are as a rule not used by the regular allopathic physician they are sometimes ridiculed, and to avoid any error in statement concerning them I will quote very largely from the literature on the subject.

Dr. W. H. Schuessler, of Oldenburg, something over forty years ago, inspired by the discoveries of such able scientists as Virchow and Moleschott, gave the world a new system of medicine founded upon the "scientific laws of cellular pathology." This system is also called the bio-chemic system of medicine. Concerning this bio-chemic theory I find the following explanations:

"The blood and tissues of human beings are composed of water, albumen, sugar, fats and inorganic salts. The relative proportion of the inorganic salts is small, yet the life and vitality of every cell in the human organism is dependent upon the presence of the necessary quantities of these inorganic constituents. This system deals with twelve remedies, which in composition correspond with the inorganic elements found in the human body. These remedies should properly be called the cell salts, but are today generally known as the Schuessler Twelve Tissue Remedies, no doubt as a tribute to their distinguished discoverer. The cell salts are the real energies in the body, the workers, the builders. The water and organic substances are inert matter used by these salts in building the cells of the body. Each salt has a special work to do; each has an affinity for certain organic materials used in building up the human frame. Thus, for instance, chloride of potassium (Kali Mur.) molecules work in fibrin. If a deficiency occurs in this salt a portion of the fibrin not having workers becomes a disturbing element and may be thrown out of the circulation through the nasal passages, lungs, bowels, etc., producing conditions called catarrh, colds, coughs, etc. As soon as a deficiency or unequalization of one or more of these salts occurs, a disturbance arises known as disease, and a symptom is set up in order that the intellect may heed and supply the want. Schuessler says: 'In all diseased conditions a deficiency of one or more of the inorganic elements (tissue salts) exists. Supply these elements and a normal condition will be restored.'

Virchow, the originator of the famous cell theory upon which the tissue remedies are based, Moleschott of Rome, and others were deeply interested in cellular pathology and proclaimed the truth of bio-chemistry, but it remained for Dr. Schuessler to develop their discoveries into a comprehensive and definite system

* Mostly quoted.

of medicine. He was the originator of the twelve tissue remedies, with which curable diseases can be successfully treated."

The twelve remedies are:

Calcarea Fluorid (Calcium Fluoride)
Calcarea Phos. (Calcium Phosphate)
Calcarea Sulph. (Calcium Sulphate)
Ferrum Phos. (Iron Phosphate)
Kali Mur. (Potassium Chloride)
Kali Phos. (Potassium Phosphate)
Kali Sulph. (Potassium Sulphate)
Magnesia Phos. (Magnesium Phosphate)
Natrum Mur. (Sodium Chloride)
Natrum Phos. (Sodium Phosphate)
Natrum Sulph. (Sodium Sulphate)
Silicea (Silicic Acid)

It is said that these twelve remedies work in harmony with the natural laws of physiological chemistry. They cure by supplying through the blood a deficiency existing in abnormal conditions.

"The salts in their crude state are physiologically inert and cannot be absorbed through the minute cell walls of the tissues. Nature works everywhere with infinitely small atoms which can only be perceived by the human eye when presented in masses. An infinitely fine sub-division of the salts is necessary in order to enable the cells to abstract from the blood their affinitive inorganic elements. This sub-division can be accomplished by a scientific trituration process originated by Dr. Schuessler. In this form it is possible to supply through the blood nutriment to every organ by transudation through the capillary walls. The dosage of these remedies is necessarily small, for it must be remembered that the entire quantity of these inorganic salts in the system is proportionately small and a minute deficiency may cause a disturbance."

Those who desire further information are referred to Carey's Bio-Chemistry, published by the Luyties Pharmacy Company, St. Louis, Mo., and to the Homeopathic Pharmacopœia.

At the Detroit meeting of the American Pharmaceutical Association, held in August, 1914, Mr. George M. Beringer, of Camden, N. J., read a paper dealing with homeopathic pharmacy, in which he held that pharmacists generally should know more about homeopathic pharmacy. This is practically the position I have always taken. While the great majority of homeopathic physicians give remedies to their patients free of cost, I know of some who write prescriptions for homeopathic remedies. There are also numerous instances where allopathic and eclectic physicians write prescriptions for homeopathic remedies.

THE PHARMACY OF USEFUL DRUGS.*

M. I. WILBERT.

Soon after the organization of the Council on Pharmacy and Chemistry of the American Medical Association in the early spring of 1905, it became evident that much of the then existing misuse of proprietary remedies was due to the fact that by far the greater number of medical practitioners had received but inadequate instruction regarding the possible uses and limitations of official and other widely used medicines. It was also recognized that with the limited amount of time that could be devoted to materia medica subjects in the already overcrowded curriculum of medical schools, is would be practically impossible to present even a superficial view of the four or five thousand drugs and preparations in every-day use.

As the fundamental object of the Council on Pharmacy and Chemistry is to develop and to foster the intelligent, scientific use of medicinal preparations in the treatment of disease, it became necessary to consider the practicability of bringing about a change in the then existing condition. At the meeting of the American Medical Association in Boston in 1907 the problems involved were discussed and on the recommendation of the Section on Pharmacology and Therapeutics, a subcommittee of the Council was appointed to consider ways and means to bring about more efficient instruction in materia medica subjects. The subcommittee, after due consideration, came to the conclusion that teachers in materia medica subjects in medical schools felt that it was necessary to impart a smattering of information in regard to a large number of medicines and drugs and their preparations because members of State Medical Examining and Licensing Boards were likely to ask questions regarding them. Members of State Medical Examining and Licensing Boards, on the other hand, thought it desirable to ask questions regarding the many thousands of official and non-official drugs and preparations because teachers of materia medica subjects referred to them in their lectures and discussed them in their textbooks. From this conclusion it became evident that if the members of State Medical Examining and Licensing Boards could be induced to restrict their examinations in materia medica subjects to a more limited list of articles more time could be devoted to their study. Conversely, if instruction in materia medica subjects could be restricted to the comprehensive consideration of a reasonably limited number of widely used and thoroughly well established articles the student could be given a thorough grounding in the properties and uses of the several drugs and preparations and this would go far toward eliminating many, if not all, of the then existing abuses.

The acceptation of such a list of useful drugs, it was further thought, might

* Presented at the meeting of the Pennsylvania Pharmaceutical Association, Forest Park, Pa,. June 22-24, 1915.

serve as an added incentive for the development of international standards for purity and strength of widely used medicaments.

The original list was compiled in co-operation with the Council on Medical Education of the American Medical Association and was subsequently submitted to members of the National Confederation of State Medical Examining and Licensing Boards. It was later submitted to teachers of materia medica and therapeutics in medical schools and to members of State Medical Examining and Licensing Boards, and finally, through the columns of the Journal of the American Medical Association, to medical practitioners generally.

The principles guiding the inclusion of articles in the list of useful drugs were primarily based on the continued extensive use of a drug or preparation, on the reports of clinical experiments as reflected in current literature and on the reports of experimental work done in pharmacologic laboratories and in hospitals equipped with proper laboratory facilities.

Recognizing the influence of current medical literature even when evidently of an advertising nature, the Council has included in the list of useful drugs a number of articles not now included in the Pharmacopœia of the United States or to be included in the revision now in press.

In round numbers the present list of useful drugs includes 450 titles, of which 231 may be classed as drugs and chemicals, 173 as preparations, 43 as definitions of forms of drugs, and 13 as cross references.

As suggested above the list is primarily intended to be educational and to reflect as nearly as is practical the best medical practices of the time. The object is not to restrict teaching in medical schools to this list but to make sure that medical students are given a comprehensive and satisfactory training regarding the properties and uses of the several articles and are duly impressed with their shortcomings and limitations.

It is satisfactory to note in this connection that teachers in medical schools generally have evidenced an appreciation of the need for devoting an additional amount of time to the consideration of the more important medicaments and there is now a fair prospect that future graduates in medicine will be given ample instruction to develop an efficient therapeutic aramentarium.

The pharmacy of this list of useful drugs has as yet not received the care and attention that is properly due it. Pharmacists generally do not appear to realize that much, if not all, of the dissatisfaction with established or well-known drugs is due to the fact that as these drugs reach the patient they are frequently not strictly in accord with the requirements of established standards.

The compilation of data from the reports of State Boards of Health and of State Food and Drug Inspectors, as presented in the several volumes of the "Digest of Comments on the Pharmacopœia of the United States and on the National Formulary," clearly shows that fully 50 percent of the more widely used preparations do not comply within reasonable limits with official requirements. The chemist of the Maine Agricultural Experiment Station in a recent comment on this shortcoming, says in part:

"It is rather startling to find that half of the pharmaceutical preparations examined, which are as simple to make as a batch of biscuit, differ more than 10 percent from the standard."

The object of pharmacy is to exercise control over the identity and purity of articles used as medicine and while it is generally admitted that the average pharmacist cannot well be expected to systematically examine all of the thousands of articles carried in stock, there is practically no reason why he should not concentrate his efforts and ability on the limited number of articles included in the list of useful drugs so as to assure physicians and others that the articles included in this list will uniformly comply with the official requirements.

As noted above the list is intended to include only such drugs and preparations as are in general use or are accepted as having well established medicinal value or demonstrated superiority. The list at the present time includes practically all of the preparations of the Pharmacopœia of the United States for which standards and assay processes are included and also includes practically all of the widely used household remedies that are frequently examined and reported on by officials entrusted with the enforcement of food and drug laws and for these reasons alone pharmacists would do well to consider the practicability of devoting additional attention to the systematic examination and control of the several articles.

With the impending revision of the Pharmacopœia and of the National Formulary, the Council is about to revise the list and teachers in medical schools, members of State Medical Examining and Licensing Boards and others are being consulted at the present time in regard to the practicability or desirability of omitting from and adding to the list of useful drugs.

In this connection it should be remembered that the members of the Council fully realize that individually or as a body they are neither omniscient nor infallible. From its very origin the Council has courted the co-operation and assistance of not alone medical men but also pharmacists.

In the revision of the list under discussion it is particularly important that pharmacists should be given an opportunity to record their criticisms and opinions of the list and its objects and to suggest ways and means for inducing pharmacists generally to prepare and to dispense the preparations included in the list in accord with official requirements.

As has been pointed out before we, in this country, are sadly in need of more energetic and more effective control of all drugs and medicines. The only really safe and efficient control involves honesty, knowledge, intelligence and care on the part of the person dispensing the medicine to the consumer so that unless pharmacists as a class can be induced to devote special attention to the systematic examination and control of drugs and preparations widely used in the treatment of disease, the manufacturers of specialities or proprietaries will continue to have a reasonable argument with which to approach the physician. In conclusion it may be stated that pharmacists as a class may well endeavor to secure for themselves and for their craft the recognition and respect that is properly their due for services rendered but it will be practically impossible to do this unless they collectively and individually insist that all members of their craft live up fully to the requirements that may be reasonably made of them.

FULLER'S EARTH; ITS ADSORPTIVE POWER, AND ITS ANTIDOTAL VALUE FOR ALKALOIDS.*

BERNARD FANTUS, M. D.

For several decades fuller's earth (Parsons[1]) has been used extensively for the removal of coloring matter from oils. It owes this use to its capacity for adsorbing basic colors from solutions, which resides in the finest particles of the clay. The union between the basic substance and the earth is believed to be physical, as it can be easily broken up by use of proper solvents.

In 1910, John Uri Lloyd,[2] of Cincinnati, discovered that the addition of fuller's earth to alkaloids greatly diminished or almost abolished their bitter taste and that most alkaloids could be quantitatively removed from solutions by means of it. Further research revealed that this activity resided in the finest particles of the earth, which Lloyd separated by elutriation from the coarser portion and to which the name "Lloyd's reagent" has been applied.

In view of the theoretic interest as well as the practical possibilities inherent in this property of fuller's earth, this research was undertaken to determine, first, the relation of alkaloids to "Lloyd's reagent" and to various other specimens of fuller's earths; and, secondly, to see to what extent the action of various alkaloids may be modified by combination with these earths. Lloyd, Eli Lilly & Co., and various producers of fuller's earth have kindly supplied liberal quantitaties of material, by means of which the following data were obtained.

THE ALKALOID ADSORBING QUALITY OF VARIOUS SPECIMENS OF FULLER'S EARTH.

This was studied by briefly shaking accurately measured quantities of alkaloidal solutions with varying amounts of fuller's earth, filtering and then testing the filtrate for the alkaloid to determine the smallest amount necessary to remove the alkaloid from the solution. The figures given in Tables 1 and 2 show how many parts of fuller's earth had to be used to remove 1 part of alkaloid from solution. There is some difficulty in deciding on the end-point in these determinations, owing to the fact that water dissociates the combination to a slight extent, so that it is almost impossible to get rid of traces of the alkaloids in the filtrate. Therefore the smallest amount of fuller's earth that would remove the alkaloid as thoroughly as a larger amount was the quantity looked for.

In Table 1, the various earths have been arranged in order of their adsorptive power. It must be understood that the figures given in this table are only of relative value. Slight modifications in the technic of the test give quite different results. Nevertheless, when the same technic was applied to each of the differ-

* From the Pharmacologic Laboratory of the College of Medicine of the University of Illinois, through Journal A. M. A.

[1] Parsons, Charles L.: Fuller's Earth, Bull. 71, Mineral Technology, Dept. of the Interior, Bureau of Mines, October, 1913.

[2] Lloyd, John Uri: Lloyd's Reagent—Preliminary Announcement, Jour. Am. Pharm. Assn., May, 1914, iii, No. 5, p. 625.

ent specimens, their relative position in the table was well maintained. It must furthermore be realized that the adsorptive power of fuller's earth from various sources depends, to a certain extent, on the degree and uniformity of fineness of the specimen. Mere sifting raises the value, if a considerable amount of coarse particles be present; so does elutriation. Nevertheless there is a limit to which the adsorptivity of any one specimen may be raised by these means.

TABLE 1.—Adsorptive value and acidity of various specimens of fuller's earth.*

Specimen	Morphin Sulphate, 0.5% sol.	Quinin Bisulphate, 0.3% sol.	Malachite Green 1%, with 0.25% Morphin	For 100 Gm. Earth Phenolphthalein, c.c. of Tenth Normal Sodium Hydroxid	Congo-red*
Colloidal portion of Lester Clay without drying.†	6.5	9	20	77	Purplish.
Lloyd's Reagent, Eli Lilly & Co.	8	10	80	155	Bluish purple.
General Reduction Co., Dry Branch, Ga.	20	30	60	175	Blue.
Olson Fuller's Earth, Benton, Ark.	28	44	70	20	Red with trace of blue.
Specimen F (source unknown)	28	50	75	215	Bluish purple.
Lester Clay Co. (xx F) Jacksonville, Fla.	36	50	100	25	Reddish purple.
Specimen D (source unknown)	52	74	105	30	Red with trace of blue.
Midway, Fla., Fuller's Earth	70	80	120	40	Bluish red.
Manatee (E x F) Ellenton, Fla.	80	104	115	15	Bluish red.
Atlantic Refining Co. (xxF) Ellenton, Fla.	110	140	130	5	Red with faint tr. of blue.
Specimen E (source unknown)	200	280	160	8	Red with faint tr. of blue.
Pear's Precipitated....	500	400	600	5	Red with faint tr. of blue.
Kaolin	600	600	1,000	0	Red.

* The figures in the first three columns indicate parts by weight of the respective earths required to remove from solution 1 part of the substance named at the head of the column. The figures in the fourth column indicate cc. of tenth normal sodium hydroxide needed to neutralize 100 gm. of fuller'se arth, phenolphthalein being used as indicator. The specimens are arranged in order of adsorptive power. Variations in adsorptive power of different specimens from the same source have been noted.

† Drying would reduce activity somewhat.

It will be noted that "Lloyd's reagent" is considerably more powerful than any one of the specimens of fuller's earth. It will also be seen that the specimens obtained from Ellenton, Fla., are quite deficient in this power. Pear's precipitated fuller's earth, a very fine white powder, is surprisingly inert. The activity of kaolin is practically nil. In view of the fact that the United States Dispensatory as well as the National Dispensatory quote "fuller's earth" as one of the synonyms of kaolin, it seems of importance to point out that there is a marked difference in the adsorptive power of these substances.

Kaolin as well as fuller's earth is considered to be essentially composed of hydrous aluminum silicate; the latter being merely less pure than the former. That this is the case can be readily seen by comparing the composition of kaolin (Watts[3]) with that of fuller's earth (Vaughan[4]) and of Lloyd's reagent (Waldbott[5]):

	SiO_2	Al_2O_3	Fe_2O_3	CaO	MgO	Alkalies	Water
Kaolin	45.40	37.34	1.92	0.44	0.20	0.52	14.0
Fuller's Earth	57.26	18.33	1.87	2.58	1.06		18.4
Lloyd's Reagent	55.30	9.82	14.80	1.58			17.41

It is an interesting question, why such great difference in adsorptive power exists among these substances. The following theories present themselves: First, it might be due to a physical difference, namely, the amount of colloidal material present; secondly, it might be due to difference in reaction; thirdly, it might be due to difference in chemical composition.

[3] Watts, A. S.: Mining and Treatment of Feldspar and Kaolin, Bull. 53, Dept. of the Interior, Bureau of Mines, 1913, p. 37.

[4] Vaughan, T. W.: Fuller's Earth Deposits of Florida and Georgia, Bull. 213, Dept. of the Interior, U. S. Geo. Survey, 1902, p. 393.

[5] Waldbott, Sigmund: Precipitation of Alkaloids by Lloyd's Reagent, Jour. Am. Chem. Soc., June, 1913, p. 837.

THE AMOUNT OF COLLOID IN FULLER'S EARTH.

Ashley[6] believes that the power of adsorbing certain dyes by clay supplies a measure of the amount of colloid present. He selected malachite green as the best dye known for this purpose, as it is wholly non-colloidal. Colloidal dyes, even if as feebly colloidal as methylene blue, introduce complicating factors that vitiate results, as may be seen by comparing the figures for malachite green with those arrived at with methylene blue: of Specimen F 40 times the amount was required, of Specimen D 60 times, of Specimen E 50 times, of Midway, Fla., fuller's earth 60 times—figures the are very near together in spite of great difference in alkaloid adsorbing power of these various specimens. Ashley agitates the clay with the dye solution for an hour, by means of a small ball mill, permits the clay to settle over night, and determines the amount of malachite green adsorbed by comparison with dilutions of a standard solution of malachite green. He found that half an hour's settling gave results that were too erratic, in view of the slow sedimentation of some specimens of fuller's earth. It must be understood that colored colloidal material in suspension makes the solution appear darker, so that it would seem less color was adsorbed, leading to the judgment that that clay is less colloidal, when it would be actually more colloidal than another clay that settled readily. I believe I have hit on a much less troublesome, more rapid and probably as accurate method of estimating the adsorptive power of fuller's earth by means of malachite green. The addition of a small quantity of an alkaloid, for example, morphine, to a fuller's earth suspension produces immediate deflocculation. On the other hand morphine does not readily salt out the malachite green. I therefore used in the determination of the malachite green figures (Tables 1 and 2) a solution of the following composition:

Malachite green	1.0
Morphine sulphate	2.5
Distilled water to	1000

Filter after prolonged agitation.

The amount of fuller's earth needed to remove a certain quantity of malachite green from this solution, expressed in multiples of that quantity, is represented by the figures in Table 1. It will be noted that these figures run quite closely parallel to the figures indicating alkaloid adsorptive power. Other electrolytes, for example, sodium chloride, also produce deflocculation of suspended fuller's earth. However, considerably larger quantities of sodium chloride are needed to produce this result promptly: quantities that are capable of salting out the malachite green, thus interfering with the test.

From Tables 1 and 2 it will be seen that the adsorption of malachite green runs parallel with the adsorption of alkaloids, and is therefore presumably due to the same cause. To use this adsorption as a measure of the amount of colloid present, as is proposed by Ashley, merely rests on the assumption that it is due to colloid. It does not prove that this is the case. Inasmuch as other colloids experimented with, such as colloidal aluminum hydroxide, colloidal ferric hydroxide, colloidal silicic acid, mastic emulsion, do not have the power of adsorbing alkaloids to nearly the same degree as active fuller's earth, it is reasonable

[6] Ashley, Harrison Everett: The Colloidal Matter of Clay and Its Measurement, Bull. 388, U. S. Geol. Survey, 1909.

to assume that we have here a case of specific adsorption; and that, while no doubt the colloidal state is necessary for this effect, it is not the essential cause of it.

THE "ACIDITY" OF FULLER'S EARTH.

To determine whether the acid reaction generally displayed by fuller's earth is the cause of the effects observed, the degree of "acidity," or rather the power of the earth to adsorb bases, was determined for each specimen by titration of 2 gm. of the earth, suspended in 100 cc. of distilled water, with tenth normal sodium hydroxide, using phenolphthalein as an indicator. *A priori* one might expect that the power of adsorbing alkali would be proportionate to, or at least run parallel with, the power of adsorbing alkaloids. This, however, is not the case, as can be seen by a glance at Table 1. Nevertheless, specimens devoid or practically devoid of acidity, like kaolin or Pear's precipitated fuller's earth, fail to adsorb alkaloids and those of lowest acidity are lowest in the list of alkaloidal adsorbents. Hence the presence of "acidity" is necessary to enable fuller's earth to adsorb alkaloids; though its degree is by no means a measure of the degree of this power. It therefore appears there are at least two factors involved in the adsorption phenomenon under consideration: the one the "acidity," the other the colloidal state. Whether the reason for the comparatively high adsorptive power of "Olson" and "Lester" fuller's earth, in spite of their rather low "acidity," is due to a relatively higher content of colloid than is present in more acid earths of lower activity, or whether there are two different "acidities" involved, one of importance in adsorption of alkaloids and the other not, remains to be settled. Nor have I the data at hand, at present, to discuss with any degree of profit the other theory previously advanced. On work on these questions I hope to report in the near future.

TABLE 2.—Proportion of fuller's earth needed to remove one part of alkaloidal salt from solution.

Alkaloidal Salt	Lloyd's Reagent	General Reduction Co	Olson Fuller's Earth	Lester Fuller's Earth
Morphin sulphate	6	20	26	36
Quinin bisulphate	10	30	44	50
Nicotin hydrochlorid	20	50	100	110
Cocain hydrochlorid	30	75	95	150
Aconitin nitrate	50	70	100	120
Strychnin sulphate	60	110	120	200
Colchicin hydrochlorid	130	160	200	
Malachite green	90	65	70	100

The addition of Congo-red to fuller's earth enables one to determine roughly, but quickly, the presence and degree of "acidity." It will be seen (Table 1) that all the earths that gave a blue or purple color with Congo-red were found active, while with the inactive kaolin there was no change; the others produced intermediate tints.

THE ADSORPTION OF VARIOUS ALKALOIDS BY FULLER'S EARTH

It will be seen from Table 2 that the various alkaloids differ in their relation to fuller's earth. For instance, a smaller quantity of an earth is needed to remove a morphine than a quinine salt; and less fuller's earth is needed to remove quinine bisulphate than strychnine sulphate. Colchicine needs the largest amount. As will presently be seen, these relations are significant in connection with the antidotal value of fuller's earth for these different alkaloids.

THE ACTIVITY OF ALKALOIDAL FULLER'S EARTH COMPOUNDS.

The alkaloidal fuller's earth compounds resist dilute acid; but are decomposed by alkalies, even as dilute as fiftieth normal sodium carbonate, which is approxi-

mately the alkalinity of the intestinal juice. When fuller's earth compounds of various alkaloids are treated with fiftieth normal sodium carbonate solution and the solution is acidified, it yields precipitates with Mayer's reagent, apparently in proportion to the solubility of the free alkaloid in water: the nicotine precipitate is much more copious than that obtained with cocaine; and the latter more abundant than the aconitine or the strychnine precipitate. Emetine yields only a trace. The concentration of the morphine solution obtained under these circumstances is below the threshold of distinct precipitation by Mayer's reagent, as is also a saturated solution of morphine in water; it yields, however, a copious precipitate with phosphomolybdic acid. Colchicine does not, of course, precipitate with Mayer's reagent, but does with tannic acid.

TABLE 3.—Effect on rabbits of small fatal doses of Strychnine Sulphate (5 mg. per Kilogram) given orally with and without fuller's earth and acid.

Rabbit		Dose			Effect	
No.	Weight Gm.	Strych. Mg	Fuller's Earth	Acid	Symptoms	Result
A 1	624	0.0031	0	0	Convulsions in 15 min.	Death in 45 min.
A 2	1,100	0.005	0	0	Convulsions in 5 min.	Death in 25 min.
A 3	800	0.004	0	0	Convulsions in 15 min.	Death in 1 hr.
A 4	2,000	0.010	0	0	0	Recovery
A 5	660	0.0034	0	0	Convulsions in 75 min.	Recovery
A 6	680	0.0034	0	0	Convulsions in 47 min.	Recovery
B 1	794	0.004	0.400	0	Convulsions in 47 min.	Death in 90 min.
C 1	1,071	0.005	1.500	1.500 tartaric	0	Recovery
C 2	1,140	0.005	0.600	0.600 tartaric	0	Recovery
C 3	794	0.004	0.800	0.800 tartaric	0	Death in 30 hrs.
C1 1	680	0.0034	1.020*	1.020 tartaric*	0	Recovery
C1 2	730	0.0037	0.370*	0.370 tartaric*	Convulsions in 45 min.	Death in 4 min.
D 1	740	0.0037	1.110	2.220 NaH_2PO_4	0	Recovery
D 2	680	0.0034	0.340	1.020 NaH_2PO_4	0	Recovery
D 3	727	0.0037	0.375	0.740 NaH_2PO_4	0	Recovery
D 4	674	0.0031	0.310	0.310 NaH_2PO_4	0	Recovery
D 5	2,300	0.0115	1.150	1.150 NaH_2PO_4	0	Recovery
D1 1	740	0.0037	1.110*	1.110 NaH_2PO_4*	0	Recovery
D1 2	1,050	0.0034	1.600*	1.600 NaH_2PO_4*	0	Recovery
D1 3	1,640	0.0082	1.640*	1.640 NaH_2PO_4*	0	Recovery
D1 4	500	0.0025	0.750*	0.750 NaH_2PO_4*	0	Recovery
D1 5	579	0.0029	0.860*	0.860 NaH_2PO_4*	0	Recovery

* Five minutes later.

In view of this dissociability of the alkaloidal fuller's earth compounds by very dilute alkali, it is easy to understand why they become active in the animal body in spite of the fact, as Gordin and Kaplan[7] have shown, that the digestive ferments have no disrupting effect on these compounds. Being insoluble in acid liquids, even in the presence of pepsin, they pass through the stomach without acting on this viscus and without being acted on. On arriving in the intestine, they are gradually dissociated into their constituents, yielding the alkaloid to absorption. This explains why the general action of alkaloids, administered in this combination, is markedly delayed; and why a larger does is needed to obtain the same effect.

TABLE 4.—Effect on rabbits of large fatal doses of Strychnine Sulphate (10 mg. per Kilogram) given orally with and without fuller's earth and acid.

Rabbit		Dose			Effect	
No.	Weight Gm.	Strych. Mg	Fuller's Earth	Acid	Symptoms	Result
A 1	2,250	0.0225	0	0	Convulsions in 47 min.	Death in 47 min.
B 1	1,500	0.015	7.50	0	7	Death in 12 hrs.
C 1	624	0.0624	1.25	1.25 tartaric	0	Recovery.
D 1	2,250	0.0225	2.22	2.22 NaH_2PO_4	0	Recovery.
D 2	530	0.0037	1.14	1.14 NaH_2PO_4	0	Recovery
D1 1	1,870	0.0187	3.60*	3.60 NaH_2PO_4*	Convulsions in 15 min.	Death in 17 min.
D1 2	1,870	0.0187	3.60*	3.60 NaH_2PO_4*	Convulsions in 15 min.	Death in 17 min.

* Five minutes later.

This modification of the action of alkaloids is of toxicologic, of pharmacodynamic, and of therapeutic interest. The diminution of taste, for instance, obtained in this manner has made it possible to produce perfectly pleasant sweet tablets of strichnine (Fantus[8]) for administration to children. The absence of effect on the stomach might be of value in connection with some of the alkaloids. Though, in case of ipecac, the removal of the emetic action by means of fuller's earth also seems to destroy action on certain infusoria, as I have found in as yet unpublished experiments. The delayed absorption might increase the effect on the intestine and its contents; for example, the quinine combination might exhibit

[7] Gordin and Kaplan: Jour. Am. Pharm. Assn., December, 1914, iii, 1656.

[8] Fantus, Bernard: Tabellae Dulces, Sweet Tablets for Children's Medication, Jour. Am. Pharm. Assn., May, 1914, p. 656.

amebicidal action in the intestine. The delayed absorption of cocaine may make the cocaine combination of value as an antipruritic in weeping skin disease. Work on some of these questions is being carried on at present.

THE NAMING OF THE ALKALOIDAL FULLER'S EARTH COMPOUNDS.

Inasmuch as some of these alkaloidal fuller's earth compounds are likely to prove of therapeutic value, it might be well to discuss the terms that have been applied to them. Lloyd named these "alcresta" alkaloids. It is under this title that Eli Lilly & Co. propose to place them on the market. The name is unfortunately not descriptive of the nature of the compound.

TABLE 5.—Effect on dogs of fatal dose of Strychnine Sulphate (2 mg. per Kilogram) given orally with and without fuller's earth and acid.

Dog		Previous Adm. of Morphin. 5 Mg per Kg.	Dose				Effect	
No.	Weight, Gm.		Strych. Sulph., 2 Mg per Kg.	Accomp. (+) or Followed	Fuller's Earth	Acid	Symptoms	Res...
A 1	8,500	0	0.017	.. ..	0	0	Convulsions in 12 minutes	Death in 26 minutes.
A 2	9,500	0	0.019	.....	0	0	Convulsions in 10 minutes	Death in 11 minutes.
A 3	7,000	0.035	0.014	.....	0	0	Convulsions in 100 minutes	Death in 135 minutes.
A 4	7,300	0.037	0.0146	.....	0	0	Convulsions in 25 minutes	Death in 40 minutes.
A 5	14,000	0.070	0.028	.....	0	0	?	Death in 24 hours.
A 6	8,250	0.040	0.014	.....	0	0	Convulsions in 7 hours.	Death in 20 hours.
B 1	8,000	0	0.016	+	4.80	0	Convulsions in 30 minutes lasting for 6.20 hours	Recovery.
C 1	10,500	0	0.039	+	12.00	12.0 Tart.	Emesis + Conv. 0 ..	Recovery.
C 2	9,000	0	0.018	+	5.4	5.4 Tart.	Emesis (?) Conv. 0 .	Recovery.
C 3	5,000	0	0.010	+	3.0	3.0 Tart.	Convulsions in 2.30 hours	Death in 2:45.
C 4	9,000	0	0.018	+	5.4	1.8 Tart.	Convulsions in 1.30 hours	Recovery
C 1	8,500	0	0.019	5 min. later	5.7	5.7 Tart.	Convulsions in 14 minutes	Recovery
C 2	12,500	0	0.025	5 min later	7.5	7.5 Tart.	Emesis in 20 minutes	Recovery.
C 3	6,500	0	0.013	5 min later	3.9	3.9 Tart.	?	Death in 20 hours.
C 4	10,000	0	0.032	5 min later	9.6	9.6 Tart.	0	Recovery.
C 5	7,500	0	0.015	10 min later	4.5	4.5 Tart.	Convulsions in 10 minutes	Death in 20 minutes.
D 1	15,500	0	0.031	+	9.3	18.6 NaH_2PO_4	Emesis, slight	Recovery
D 2	14,500	0	0.029	+	8.7	17.4 NaH_2PO_4	Defecation	Recovery
D 3	12,000	0	0.024	+	7.2	14.4 NaH_2PO_4	Emesis	Recovery
D 4	8,500	0	0.017	+	5.7	5.7 NaH_2PO_4	Convulsions in 78 minutes	Death in 130 minutes.
D 1	7,000	0	0.014	5 min. later	4.2	8.4 NaH_2PO_4	Emesis, convulsions (?) ..	Death in 20 hours.
D 2	10,500	0	0.021	5 min later	6.3	12.6 NaH_2PO_4	Convulsions in 4 hours. ..	Death in 30 hours
D 3	4,000	0.080	0.016	5 min later	2.4	7.4 NaH_2PO_4	0	Recovery
D 4	9,500	0.190	0.017	10 min later	5.1	5.1 NaH_2PO_4	Convulsions, slight	Recovery
D 5	9,250	0.0925	0.0247	10 min later	3.8	3.8 NaH_2PO_4	0	Recovery
D 6	6,500	0.065	0.014	15 min later	4.2	4.2 NaH_2PO_4	0	Recovery
E 1	4,125	0	0.00825	+	2.475	5.0 Potas.Btart	Convulsions (?)	Death in 5 hours

McGuigan[9] has applied the name "colloidal" strychnine to the strychnine compound with fuller's earth; a name I believe to be erroneous, as the moment the combination between the colloid and the alkaloid occurs, the colloidal state is destroyed and a coarse suspension results, as may be shown by the readiness with which morphine produces deflocculation of a fuller's earth sol or gel. It appears to me that the best name to apply to the strychnine compound would be "strychninated fuller's earth"; to the morphine compound "morphinated fuller's earth"; to the cocaine compound "cocainated fuller's earth," etc.; terms analogous to "chlorinated lime" and "sulphurated potash."

Lloyd first hoped that his reagent would prove a universal antidote for alkaloids and he describes it as one of the bitterest disappointments of his life when it was shown by Dr. Felter, in 1911, that the combination of Lloyd's reagent with strychnine was still capable of killing a dog in convulsions. Lloyd suggested to me that the addition of tartaric acid or of stearic acid to his reagent might raise its anti-

[9] McGuigan, Hugh: A Colloidal Compound of Strychnine and Its Pharmacology, The Journal A. M. A., November 28, 1914, p. 1933.

dotal value. It will presently be seen that this is indeed the case with tartaric acid. Experiments with the stearic acid combination proved negative.

The experiments recorded below were undertaken primarily to study the toxic action of alkaloidated fuller's earth It soon became apparent, however, that fuller's earth did possess antidotal value against certain alkaloids, while it had little value against others, as will be shown by the following data.

ANTIDOTAL VALUE IN STRYCHNINE POISONING.

The antidotal value of fuller's earth in strychnine poisoning in the rabbit may be estimated from Tables 3 and 4. It will be seen in Table 3 that 5 mg. per kilogram is invariably convulsive and frequently fatal for small rabbits; that, on the other hand, a large rabbit (A 4) showed no effect from such a dose. Eliminating, therefore, the only other large rabbit in this series (D 5) from consideration, we find that fuller's earth alone is not antidotal to strychnine. The addition of tartaric acid or of sodium dihydrogen phosphate to the fuller's earth renders it, however, capable of preventing convulsions and of saving life in small rabbits, even if administered five minutes after the poison has been given. The sodium dihydrogen phosphate showed itself superior to the tartaric acid by having this effect invariably, while with the tartaric combination convulsions and deaths have occurred. The dose of 10 mg. per kilogram (Table 4) is invariably fatal; and yet the addition of tartaric acid or of sodium dihydrogen phosphate to fuller's earth has enabled it to prevent effects, if administered at the same time; but not, if administered five minutes later. Against 15 mg. per kilogram, fuller's earth with sodium dihydrogen phosphate has been useless so far as saving of rabbits is concerned; but it, no doubt, postponed the effects to a considerable degree, as will be seen from the following observations:

TABLE 6.—Effect on rabbits of fatal doses of Morphine given orally with and without Fuller's earth.

Rabbit		Dose			Effects	
No	Weight Gm.	Morphine Sulphate per Kg.	Acetic Acid followed	Fuller's Earth	Symptoms	Result
A 1	840	1 gm.		0	Depr. Conv. in 2 hrs.	Death in 7 hrs.
B 1	700	1 gm.	+	30.00	Some depression	Recovery
B 2	1,230	15 gm.	+	50.00	Some depression	Recovery
B 3	1,140	2 gm.		50.25	Some depression	Recovery
B1 1	810	1 gm.	10 min. later	37.50	Some depression	Recovery
B1 2	620	1 gm.	15 min. later	1.75	Some depression	Recovery
B1 3	1,140	1 gm.	30 min. later	99.00	Depr. Conv. in 30 min.	Death in 2 hrs.
B1 4	740	1 gm.	30 min. later	30.50	Depr. Conv. in 2 hrs.	Death in 3 hrs.

Rabbit D 10, weighing 907 gm. was given 0.015 gm. strychnine with 4.50 gm. each of fuller's earth and of sodium dihydrogen phosphate. Death occurred in four hours and thirty minutes.

Rabbit D 11, weighing 2,660 gm. was given 0.040 gm. of strychnine with 13.3 gm. each of fuller's earth and sodium dihydrogen phosphate. Death occurred in thirty-two hours.

Table 5 shows that a dose of 2 mg. per kilogram is invariably fatal to dogs. The addition of fuller's earth saved life, but did not prevent convulsions. The addition of tartaric acid and of sodium dihydrogen phosphate frequently prevented convulsions and generally saved life. However, emesis was so frequently produced as to vitiate the results. Therefore morphine was given about one hour before the administration of the poison. This preliminary administration of morphine, of course, produced vomiting and often defecation within the hour, followed by a depression of the vomiting center, so that the doses were now regularly retained. Experiments A 3 to A 6 (Table 5) show that the morphine does not save the life of the animal, though it delays results. Experiments D 3 to

D 6 show that fuller's earth and sodium dihydrogen phosphate are capable of saving life, even though no emesis takes place. The fact that it was possible to save the life of morphinized dogs, even if the antidote was given five, ten and fifteen minutes after the poison, while the antidote failed to produce such result without the morphine, is most interesting and requires further study. Possibly it is due to delayed evacuation of the stomach.

A dose as large as 4 mg. per kilogram makes demands on the antidote that it is not able to meet, as will be seen from the following experiments:

Dog C 6, weighing 9 kg., was given, at 9:15 a. m., 0.036 gm. strychnine with 5.4 gm. each of fuller's earth and tartaric acid. It was found dead next morning, no convulsions having been observed.

Dog C 7, weighing 13.5 kg., was given at 9:30 a. m. 0.108 gm. strychnine with 9.1 gm. each of fuller's earth and of tartaric acid. There was slight emesis at 11 a. m. The animal was found dead next morning, no convulsions having been observed.

ANTIDOTAL VALUE IN MORPHINE POISONING.

Table 6 shows that the antidotal value of fuller's earth is much greater for morphine than it is for strychnine. This is probably due to the fact, shown in Tables 1 and 2, that morphine is much more readily removed from solutions by fuller's earth than are any of the other alkaloids, as well as to the slight solubility of the alkaloid morphine and the large dose needed to produce death in these animals. It will be noted that the mere addition of fuller's earth saved rabbits from as much as twice the fatal dose of morphine, and that fuller's earth was still capable of saving life, if given ten and fifteen minutes later, but not if given twenty minutes later. The administration, at intervals, of fuller's earth in morphine poisoning in human beings, even after hypodermic administration of the poison or evacuation of the stomach, appears indicated; as the morphine excreted into the stomach would be absorbed by the clay and its reabsorption prevented or at least delayed.

TABLE 7.—Effect on dogs of fatal doses of Cocaine with and witout Morphine and fuller's earth.

Dog		1 Hour Prev.	Dose		Effects	
No.	Weight, Gm.	Hypo. of Morphin, 5 Mg. per Kg.	Cocain, Gm.	Fuller's Earth	Symptoms	Result
A 1	7,250	0	0.1 per kg.	0	Convulsions in 25 min.	Death in 30 min.
A 2	3,000	0	0.1 per kg.	0	Convulsions in 15 min.	Death in 20 hrs.
A 3	2,800	0	0.2 per kg.	0	Convulsions in 7 min.	Death in 16 min.
A 4	7,500	0.040	0.1 per kg.	0	Waining cor.	Recovery.
A 5	5,000	0.025	0.1 per kg.	0	Depr., later exit.	Recovery.
A 6	0,350	0.035	0.2 per kg.	0	Convulsions in 270 min.	Death in 300 min.
A 7	7,140	0.035	0.2 per kg.	0	Convulsions in 15 min.	Death in 20 min.
A 8	4,350	0.020	0.2 per kg.	0	Depression	Death in 20 hrs.
B 1	6,000	0	0.1 per kg.	60.0	Emesis in 45 min.	Recovery.
B 2	12,000	0.060	0.1 per kg.	120.0	0	Recovery.
B 3	6,800	0.035	0.2 per kg.	136.0	0	Recovery.
B 4	4,900	0.025	0.2 per kg.	98.0	0	Recovery.
B 5	3,740	0.019	0.2 per kg.	74.0	0	Recovery.

ANTIDOTAL VALUE IN COCAINE POISONING.

In view of the local anesthetic quality of cocaine, it is of interest to note that the dog B 1 (Table 7), that received it together with fuller's earth, vomited. Evidently the compound produced by fuller's earth with cocaine is not decomposed in the stomach, which is entirely in accord with the general tendency of the alkaloidal fuller's earth compounds not to give up the alkaloid to an acid solution. This made it necessary again to use hypodermic injections of morphine, one hour previously, to prevent the emesis. However, inasmuch as morphine is an antagonist to cocaine, as will be seen by comparing the result in A 1 and A 2 with A 4 and A 5, it was necessary to use a large fatal dose of cocaine (0.2 gm. per kg.) in order to have a fatal does in the presence of morphine. The antidotal value of fuller's earth under these circumstances is demonstrated by the uniformly fatal results in experiments A 6, A 7 and A 8, as compared with the

uniformly negative results in Experiments B 3, B 4 and B 5. Evidently fuller's earth is an antidote to cocaine, and it does not need acid to produce this effect, at least in the presence of morphine, which probably enhances the antidotal effect of fuller's earth by delaying the emptying of the stomach.

ANTIDOTAL VALUE IN NICOTINE POISONING.

Rabbits are killed within twenty minutes by 0.20 gm. nicotine per kilogram, as will be seen from Table 8. The addition of fuller's earth to such a dose is followed by recovery. A dose of 0.40 gm. per kilogram is fatal even when fuller's earth and sodium dihydrogen phosphate are added. If the antidote is given five minutes after the poison was administered, it is unable to save life. Evidently nicotine acts too rapidly to admit of any interval between the giving of the poison and of the antidote.

ANTIDOTAL VALUE IN IPECAC POISONING.

Emetic Dose.—If two dogs of similar size and with empty stomachs are chosen, and one of these is given, by means of the stomach tube, 0.3 cc. per kilogram of fluidextract of ipecac mixed with ten times the volume of water, while the other receives the same dose with the addition of 3 gm. of active fuller's earth per cubic centimeter of fluidextract used, the first dog will vomit profusely and many times—usually not until after half an hour, but within one hour—and soon afterward may have bowel evacuations, which sometimes become bloody. The other dog will show no effects whatever excepting perhaps, occasionally, a looseness of the bowels on the next day.

Fatal Dose.—A dose of 1.5 cc. of fluidextract of ipecac per kilogram has been found uniformly fatal in dogs, as will be seen from the following experiments:

Dog. A, weighing 15.5 kg. was given 23.25 cc. of fluidextract of ipecac, diluted with 232.5 cc. of water, at 9:42 a. m. Formed bowel movement occurred at 11:25; vomiting at 12, and again at 12:15; semi-liquid bowel movement at 12:30. Several other attacks of emesis occurred during the afternoon, the animal refusing food, but drinking water freely. The next day it was found that the animal had bloody bowel movements; and on this day it died at 10 a. m. Necropsy showed hemorrhagic gastro-enteritis. The urine obtained from the bladder contained albumin and a few red blood corpuscles, but no casts.

Similar results were obtained in three other dogs. A different result was obtained in Dog E. This dog, weighing 7.25 kg. was given 10 cc. of fluidextract of ipecac diluted with 100 cc. of water. Within half an hour, the dog showed marked depression, salivation, and had a fluid defecation, but did not vomit. The animal died within five hours after the administration of the poison, without having had emesis or bloody purging. On post-mortem examination, performed twenty hours later, the gastro-intestinal tract was found pale and without gross evidence of inflammation. Death had evidently occurred too soon for inflammation to have developed.

Entirely different is the result when the total dose of fluidextract of ipecac is mixed with fuller's earth, 3 gm. per cubic centimeter, as may be seen from the protocol of experiment on Dog J. This animal, weighing 9.5 kg., was given 14.25 cc. of fluidextract of ipecac diluted with 142.5 cc. of water, to which 42.75 gm. of fuller's earth were added. There was no effect whatever, excepting that the animal refused food and drink for several hours afterward. During the succeeding days the animal was perfectly normal. Its bowel movements were hard and clay-colored lumps. Its urine was free from albumin. The animal was chloroformed five days afterward. Its gastro-intestinal tract was found

normal. Identical results were obtained in three other dogs. On the other hand, one dog whose stomach was full of food vomited shortly after administration of the dose, probably from over-distention of the stomach. Two other dogs recovered from twice the surely fatal dose of fluidextract of ipecac, namely, 3 cc. of the fluidextract per kilogram, diluted with ten times the amount of water to which a proportionate amount of fuller's earth had been added. Both dogs had a single emesis soon after injection, probably from over-distention of the stomach, for the bulk of the dose is considerable; but developed no further results of any importance and recovered completely, as may be seen from the protocol of one of these experiments:

A dog, weighing a little less than 12 kg., was given 35 cc. of fluidextract of ipecac with 360 cc. of water and 14 gm. of Lloyd's reagent. The dose was administered at 9:50 a. m. Shortly afterward, profuse salivation appeared and lasted for over an hour. Twenty minutes after the injection a single emesis occurred, the vomit consisting of thin watery fluid with a small amount (3 gm.) of the injected preparation. There was no further emesis. A fine muscular tremor appeared at 12 m., and lasted about an hour. Complete recovery took place.

Evidently fuller's earth is a powerful antidote to ipecac. To test its practical value in case of poisoning, the antidote was administered at varying intervals of time after the introduction of the poison with results that might best be shown by tabulation.

TABLE 8.—Effect on abbits of fatal doses of Nicotine given orally with and without fuller's earth and acid.

Rabbit		Dose				Effects	
No	Weight, Gms	Nicotine 1:10 Sol'n Cc	Acetic Acid 6 Cc	Fuller's Earth Gm	Acid	Symptoms	Result
A 1	1,500	0.75		0	0	0	Recovery
A 2	980	0.50		0	0	Convulsions in 15 min	Death in 20 min
A 3	1000	0.50		0	0	Convulsions in 15 min	Death in 30 min
A 4	1,400	0.70		0	0	Convulsions in 10 min	Death in 15 min
B 1	740	0.70	+	10.0	0	0	Recovery
B 2	940	0.70	+	10.0	0	Depression in 5 min	Recovery in 60 min
B 3	880	0.80	+	22.0	0	Depression.	Death in 120 min
B 4	760	0.80	5 drops	10.0	0	Convulsions in 11 min.	Death in 30 min.
D 1	800	0.80	+	10.0	5c NaH$_2$PO$_4$	0	Recovery
D 2	680	0.80	+	12.0	5c NaH$_2$PO$_4$	0	Death within 36 hrs.

When fuller's earth was given ten minutes afterward, the animal was seriously affected by the poison, but recovered. Fuller's earth was incapable of saving animals when administered twenty minutes or longer after the poison; but it rendered the picture of intoxication milder and postponed death in inverse proportion to the length of time that elapsed between the administration of the poison and of the antidote.

Table 9 shows that when fuller's earth was given mixed with the poison, no damage occurs.

ANTIDOTAL VALUE IN ACONITINE POISONING.

Table 10 shows that fuller's earth has some antidotal value in this condition also. It is difficult, however, to arrive at a definite judgment as to the degree of its value. It produces emesis even after the previous administration of morphine. That the emesis does not save life, will be seen from the fact that all the dogs that died vomited. They generally vomited more profusely than the dogs that recovered. Therefore emesis was probably not a factor in those cases in which recovery took place. It will be noted that in practically all the animals that did recover rather marked symptoms occurred: emesis generally the next day, and in several of them bloody defecation, which in one case lasted for several days. The death of the animal D 5 may not have been due to the poison, as the animal was sick before it was subjected to the experiment, as was discovered subsequently. In another series of animals, in which the alkaloid

aconitine (crystalized) was used—not the salt—death occurred in every case, even when fuller's earth or fuller's earth with acid were added, the fatal result being postponed for from twenty-four to forty-eight hours. Evidently the free alkaloid does not combine with fuller's earth as readily as does the salt.

TABLE 9.—Results of administration of fatal dose (1.5 cc. per Kilogram) of Fluidextract Ipecac with and without fuller's earth at varying intervals.

Dog	Administration	Emesis		Defecation	Result	Post-Mortem Examination
		Onset, Min	Times			
A	Ipecac.....	120	8	Bloody..	Death in 24 hours.	Violent gastro-enteritis.
E	Ipecac.....	...	0	Liquid not bloody	Death in 9 hours.	Gastro-intestinal tract pale.
F	Ipecac and fuller's earth 45 minutes later.	...	0	Liquid not bloody.	Death within 20 hours.	Gastro-enteritis.
G	Ipecac and fuller's earth 30 minutes later.	55	6	Bloody.....	Death in 28 hours.	Gastro-enteritis.
H	Ipecac and fuller's earth 70 minutes later.	70	1	Bloody.....	Death within 44 hours.	Less severe gastro-enteritis.
I	Ipecac and fuller's earth 10 minutes later.	22	13	Bloody.....	Aborted 5 fetuses. Lived for 5 days.	Gastro-intestinal tract showed evidences of past enterocolitis.
J	Ipecac and fuller's earth mixed.	...	0	Hard, clay-colored.	Recovery....	Gastro-intestinal tract normal.

TABLE 10.—Effect on dogs of fatal dose of Aconitine Nitrate, Crystallized, Merck (4 mg. per Kilogram) given orally with and without fuller's earth and acid.

Dog		Morphin Sulph., 5 mg. per Kg. Hypo. 1 Hour Prev. Gm.	Dose			Effects	
No.	Weight, Gm.		Aconitin	Fuller's Earth	NaH_2PO_4	Symptoms	Result
A 1	6,500	0.032	0.0254	0	0	Profuse emesis in 5 min.	Death in 30 min.
A 2	8,000	0.040	0.0304	0	0	Conv., emesis in 4 hours.	Death in 5 hrs.
B 1	8,000	0.040	0.0344	17.20	....	0	Recovery.
B 2	10,000	0.050	0.0432	21.60	....	Emesis next day	Recovery.
B 3	4,700	0.025	0.0180	7.60	....	Emesis (slight) in 6 hours.	Death in 24 hrs.
D 1	9,000	0.048	0.0360	18.00	18.00	Emesis next day	Recovery.
D 2	9,000	0.045	0.0342	18.10	18.10	Emesis next day. Bloody defecation.	Recovery.
D 5	8,800	0.042	0.0344	13.76	13.76	Emesis, clear in 7:30 hours.	Recovery.
D 6	6,570	0.032	0.0258	13.14	13.14	Bloody defecation next day	Recovery.
D 8	7,250	0.036	0.0290	14.50	14.50	Emesis in 1:30 hours.	Death in 44 hrs.

TABLE 11.—Effect on dogs of fatal doses of Colchicine (2 mg. per Kilogram) given orally with and without fuller's earth and acid.

Dog		Dose				Effects	
No.	Weight	Preliminary Morphin, 0.005 per Kg.	Colchicin	Fuller's Earth	Acid	Symptoms	Results
A 1	10,500	0	0.020	0	0	Vomiting in 1:30 hours. Bloody defec. in 4:30 hours.	Death with violent gastritis and colitis within 20 hrs.
A 2	7,700	0.0375	0.0155	0	0	Vomiting and bloody defec. next day.	Death with violent gastritis and colitis in 30 hours.
D 1	9,300	0.000	0.0180	5.60	5.60 NaH_2PO_4	Bloody defec. next day.	Death with less severe colitis in 60 hours.

ANTIDOTAL VALUE IN COLCHICINE POISONING.

The antidotal value of fuller's earth against colchicine poisoning is, no doubt, very slight, even though the number of experiments on this point, as shown by Table 10, may be insufficient. With the comparative indifference, however, of colchicine toward fuller's earth, as shown in Table 2, a different result could hardly be expected.

PERSONAL EXPERIMENTS WITH METHYLENE BLUE AND FULLER'S EARTH.

To put the question to an approximate test whether fuller's earth would be likely to act in human beings as it does in the lower animals, I and one of my colleagues took doses of methylene blue with and without fuller's earth with the following results:

When a dose of 0.010 gm. of methylene blue is taken a dark green color appears in the urine within a short time and disappears within twenty-four hours. If 1.0 gm. of fuller's earth is added to 0.010 gm. of methylene blue in solution, the urine acquires a faint greenish tint for twenty-four hours; the difference between the two specimens of urine being striking.

The results of larger doses might probably best be presented as in Table 12.

It will be noted that fuller's earth alone postponed the appearance of the discoloration, lessened the duration of intense discoloration, but not the duration of slight discoloration. The addition of a small amount of sodium dihydrogen phosphate did not increase very greatly the effect of fuller's earth. The addition of a larger dose that acted on the bowel within an hour and thirty minutes

markedly lessened the period and amount of discoloration. It seems safe to conclude that *fuller's earth, especially when combined with a laxative dose of sodium dihydrogen phosphate, is capable of greatly lessening in the human the absorption of substances that are readily adsorbed by fuller's earth.*

CONCLUSIONS.

1. Alkaloidal fuller's earth compounds do not act on the stomach; but are gradually dissociated in the intestine, producing a delayed and milder general action.

2. Fuller's earth has antidotal value in morphine, cocaine, nicotine, and ipecac poisoning. It has less value in strychnine and in aconitine poisoning, though even in these conditions it is capable of saving life, when combined with sodium dihydrogen phosphate. In colchicine poisoning it is of little value.

TABLE 12.—Results of doses of Methylene Blue with and without fuller's earth and Sodium Dihydrogen Phosphate.

Experiment	Dose	Effect
1	0.030 gm. methylene blue	Urine green in 1 hr. 25 min., lasting for 2½ days
2	0.030 gm. methylene blue 2.500 gm. fuller's earth	Urine green in 9 hrs., lasting for 24 hrs. Traces of discoloration occasionally for 2 days longer
3	0.030 gm. methylene blue 2.500 gm. fuller's earth 2.500 gm. NaH_2PO_4	Urine green in 10 hrs. 30 min., lasting for 17 hrs. Traces of discoloration occasionally for 2 days longer.
4	0.030 gm. methylene blue 2.500 gm. fuller's earth 5.000 gm. NaH_2PO_4	Bluish brown liquid defecation in 1 hr. 30 min. Urine light green in 10 hrs. Urine green in 14 hrs., lasting for 7 hrs. Traces of discoloration occasionally for 12 hrs. longer.

3. The power of adsorbing alkaloids is strongly developed in some fuller's earths and very feebly in others. The adsorptive value of commercial fuller's earths should be stated by the dealers; and pharmacists should demand specimens of high activity. Lloyd's reagent possesses this power to the highest degree.

4. Fuller's earth is not synonymous with kaolin, as the United States Dispensatory and the National Dispensatory would lead one to infer. It is a substance with markedly different properties.

ORIGIN OF URIC ACID.

The uric acid excreted in the urine is not by any means exclusively derived from alimentary purines; a part of it is formed in the organism. Probably the whole of this endogenous uric acid is not derived from nucleo-albumins, but from other albuminoids. When a subject is submitted to a purine-free diet or one deficient in nitrogen it is difficult to reduce the uric acid below 0.005 gm. per kilo, body weight. Probably a part of this 0.005 gm. comes from the body nucleins or other albuminoids. At any rate, they are of endogenous origin. With purine-free diet given in excess of the requirements for nutriment the amount of urinary uric acid increases. This increase is probably also endogenous. When an excess of purine-containing diet is taken, the increase in uric acid excreted is still greater than can be derived from the food. Here, again, endogenous formation must occur. A part at least of this endogenous uric acid is formed shortly after a meal. More certain knowledge of the physiological role of uric acid excretion would be obtained by the systematic study of the other nitrogenous constituents of urine. In superalimentation with nitrogenous diet the uric nitrogen does not represent a tenth part of the total nitrogen excreted.—*E. Maurel (L'Union pharm,* 1914, 55, 337, *through Pharmaceutical Journal.*)

Editorial

E. G. EBERLE, Editor.....63 Clinton Building, Columbus, Ohio

PROGRESSIVE WORK OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

INTERESTED workers in the American Pharmaceutical Association give thought to continued usefulness of the Association. The question of representation in and functions of the House of Delegates is receiving much consideration at the present time. A number of state associations have taken action on this important matter, and expressed their wishes in the resolution submitted by Chairman H. P. Hynson, as follows:

WHEREAS, The correlation of the state associations and their attachment to the A. Ph. A. would greatly enlarge the scope and increase the usefulness of the several state associations and would also increase the strength and influence of the American Pharmaceutical Association; and

WHEREAS, Such correlation and attachment would be in line with the progress of the times and consistent with all forms of effective organization; therefore, be it

Resolved, That this Association in convention assembled does hereby endorse the proposition to make the House of Delegates a body composed exclusively of representatives of the state associations; and be it

Further Resolved, That the delegates of this Association are hereby instructed to lend all the assistance in their power toward the formation of a House of Delegates composed of state association representatives, only.

If this plan of organization is adopted it will give the state associations complete control of the House of Delegates. Whether or not it might be better to have the Association and the Local Branches represented, also, in the membership of the House of Delegates, is not the question—this will be decided probably at the San Francisco meeting—the big thing is that the plan proposed will correlate the state associations with the A. Ph. A. and provides for an organized body for the discussion and shaping of common interests. Under present conditions each state association acts without any co-operation with the others, though organized for like purposes; the contemplated organization brings the associations together and should greatly promote their usefulness and strengthen their work. The subjects for constructive work are as numerous as those that confront the pharmacist.

The American Pharmaceutical Association early in its history recognized the importance of state organizations, in that respect proceeding along somewhat different lines than in the establishment of our Government, wherein States created the central governing body. The parent organization should welcome the "grown-up children" home, to plan for the welfare of the "pharmaceutical family." If pharmaceutical associations are serviceable to pharmacists in their respective states, and they undoubtedly are, then the scope of their usefulness will be enlarged by working together.

The prosperity and wonderful progress of this country is not the result of natural resources, for the Indians possessed these, but the utilization of them. Many, until recently, had the false impression that the United States was independent of other nations; few had reflected that pharmacy would be disturbed by the troubles of Europe. We are dependent, just as one individual lives by the labors of another, so trades and professions influence industry and science, and the thought can be made applicable to associations.

In order to stimulate the efficiency of the numerous national pharmaceutical associations the scope of The National Drug Trade Conference should be enlarged and its relation with the American Pharmaceutical Association strengthened. Many pharmacists affiliate with several organizations in a spirit of helpfulness without realizing their inability to actively participate in all of them and as a result membership, without service or benefit, not infrequently obtains. There are too many organizations for pharmaceutical workers who have similar objects and their concerted efforts would be productive of greater efficiency.

The American Pharmaceutical Association should be made the grand central organization for all pharmacists and as soon as practicable should have a permanent home where a laboratory could be established and research work conducted. This may be too great an undertaking at present, but perhaps means can be devised whereby the facilities of some institution may become available. This thought, however, is simply suggestive.

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DIVERSIFICATION AND SPECIALIZATION.

THE department store is nothing more than a magnified general store, in the conduct of which system and business methods of a high order obtain.

We are often accused of overdoing things. There is certainly no exception in this connection, for in some of the department stores every demand can be supplied. We are also charged with changeableness; when a method has been overworked we are apt to retract suddenly. The modern drug store is often characterized as a department store, hence this comment. The side-lines in drug stores have been added for increasing the volume of sales and providing more profit; incidentally, we might add that diversification in business was part of the prevailing system.

The time will come when there will again be more specialization, some department stores are now realizing that competent managers for the many departments increase the overhead expense to such an extent that their selling prices on standard goods are not attractive, and the public is beginning to show a preference for "specialty" stores. The smaller stores are becoming more formidable competitors.

Before further comment is made on the drug store, reference to the passing of the book store will illustrate a relevant thought. Every one who was familiar with that institution will admit a preference over the departments, or books as a side-line in stores. Unquestionably the passing of the book store was due to the inclusion of sundry items, which prompted the stocking of goods in other

stores as sidelines. May not the variety of stock in drug stores have suggested the inclusion of drugs in department stores?

Bringing the subject nearer to pharmacy, physicians specialized, not only to give better service, but because of greater remuneration therefrom.

The tendency towards side-lines in the drug store is running wild and will be the undoing of the business or result in a division into pharmacies and drug stores. There are many articles other than drugs that have a proper place in the stock carried by the druggist, but when the store presents more the aspect of a toy shop or restaurant than that indicated by the name over the door, it bids one to pause and reflect upon the effect this must have on the patron's views of pharmacy. Modern salesmanship demands a knowledge of goods in stock and the handling of them according to the methods of the specialist in the line. If druggists would carefully estimate their profits in a number of their departments, they would doubtless discard some of them.

There are extremes in diversification and specialization, and a rational medium between extremes is usually productive of the greatest good.

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ADVERTISING.

A PAGEANT representing the history and science of advertising was one of the features of the program of the annual meeting in Chicago of the Associated Advertising Clubs of America.

The moral conceptions which censor advertising have during the last ten years undergone a steady and radical refinement. The force of self-interest has been largely responsible for more critical circumspection in the acceptance of advertisements by publishers and the advertisers have arrived at the conclusion that "tell the truth" policy brings the best returns.

The principle of self-interest will continue to gather force. The character of circulation has a larger element of value than quality, because it gives tone to the advertisements. The character of circulation is the reflex of the publication's character of which not only the reading pages but the advertisements give evidence. The reputable advertiser deems it obnoxious and a display of poor business judgment to have his message associated with disreputable or dishonest advertising.

The advertising of the retailer should be directed with a co-operative purpose, making his messages "salesmen" for the goods he offers for sale. The value of a sale is secondary to a satisfied customer. Both the business and advertising profit by the square deal.

We may perhaps be permitted to say a few words relative to a form of advertising that needs regulation and may be easily adjusted by wise counseling of advertisers and publishers, namely, the insertion of reading notices. We present this thought with a view of being helpful. Unquestionably most of the present day reading notices are educative and have value for the reader, and usually, they emphasize the advertisement. The adjustment should be on the basis of equity; for certainly when one advertiser is favored and another is not, one has received less value than the other. Newspapers have discontinued these

methods, why not the magazines? If all are treated alike, no one is injured. Modern advertisements are of a character that need no further support than the quality of the goods which backs them; don't scatter the shot, concentrate; the advertisements will have more force.

Successful advertising literature is persuasive, its effectiveness depends upon brief, terse and convincing argument. Honesty is implied, for he is a fool who does not know this is the foundation of success; the higher one hopes to build, the more secure the foundation must be.

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HARRISON LAW PRESCRIPTION DECISION.

A RECENT decision issued by the Treasury Department (T. D. 2213) relates to prescriptions for narcotic drugs in any quantity not being exempt from the provisions of the Harrison law, unless for preparations or remedies exempted under Section 6 of that law, namely; such as contain not more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eigth of a grain of heroin, or more than one grain of codeine in one fluid ounce. These do not require an official order blank for their sale. The decision was rendered June 7th, and reads as follows:

"Attention is directed to the paragraph on page 4 of Treasury Decision 2172 relating to the exemption of certain "preparations" and "remedies" from the provisions of this law. The question arises whether or not "prescriptions" come within the definition of "preparations" or "remedies" as given in the Act. The word "preparations" as generally used and understood, means ready-made or prepared medicines, and the word "remedies" means that which cures or is efficacious in a specific disease or diseases under all conditions, while the term "prescription" is the written direction or recipe of a physician for the compounding or preparing of a medicine and directions for its use to meet the existing conditions in the case of a particular patient.

It is therefore apparent that the exemptions in Section 6 of the Act as interpreted in Treasury Decision 2172, relating to "preparations and remedies" containing not more than the specified quantities of the drugs enumerated, do not apply to "prescriptions" written by registered physicians calling for any quantity of the narcotic drug, unless such "prescription" is written for a "preparation or remedy" prepared in accordance with the U. S. Pharmacopoeia, National Formulary, or other formula, or for a "remedy or preparation" prepared under private or proprietary formula, carried in stock by a dealer, which may be dispensed without a "prescription."

Every "prescription" therefore, containing a narcotic drug in any quantity with the exemptions noted, must have indicated thereon the name and address of the patient, the date, the name and address of the physician, and his registry number. Such "prescriptions" cannot be refilled and must be filed for a period of two years."

Mr. J. W. England, in a paper before the recent meeting of the Pennsylvania Pharmaceutical Association, says, that this decision is open to serious

question, and that the Treasury Department has erred in making this decision, whereby the medical profession is discriminated against in favor of ready-made preparations and remedies, and that an unnecessary burden is thereby imposed upon the physician and pharmacist, without resultant advantage and with the disadvantage that it tends to make the operation of the Harrison Act more complex.

Mr. England recites that under the decision the term "preparation" is limited strictly to "ready-made preparations and remedies," official and unofficial. Continuing, he says, "If the physician orders 'Elixir of Terpin Hydrate with Codeine, N. F.' no order blank is required, but if he orders on a prescription 4 grains of Codeine and 4 fluidounces of Elixir of Terpin Hydrate, which is of exactly the same composition, he has to use an official order blank. If he orders 'Elixir of Terpin Hydrate with Heroin N. F.' no order blank is required, but if he orders on a prescription 1 grain of Heroin and 3 fluidounces of Elixir of Terpin Hydrate—the same thing—the use of an official order blank is demanded. If he orders 'Compound Mixture of Glycyrrhiza,' U. S. P. (Brown Mixture) he is exempted from the use of the official order blank, but not so if he orders a prescription containing the same ingredients and quantities of the preparation.

The word 'preparation' is derived from the Latin word *preparare,* meaning 'to make ready.' It is the act of preparing, making or compounding, especially a medicinal substance fitted for the use of a patient (Webster). It is *not* necessarily a ready-made medicine. It may be made extemporaneously, as with a prescription. Many preparations now official in the U. S. P. and N. F. were originally prescriptions, and many prescriptions now being used by physicians will become official in the U. S. P. and N. F. in the future.

"The fact that a ready-made preparation may be used in a number of diseased conditions and that the physician's prescription is limited to individual use is immaterial, because the prescription ordered for an individual case may be used, also, for a number of diseased conditions, and in fact, as stated before, often becomes a ready-made preparation."

If a little levity is pardoned, law decisions sometimes bring to mind the good old lady who marked her pies "T. M.;" when asked to explain the initials with reference to one kind, she stated that they meant " 'tis mince," for others " 'taint mince."

Mr. England concludes his argument by saying:

"It may be claimed that the Treasury Department is justified in making such an inconsistent decision on the ground of expediency, because some physicians may be abusing the exempting privilege of Section 6 of the Harrison Act, but the proper remedy would seem to be, not in the issuance of additional and qualifying regulations, but in a more rigorous enforcement of the existing provisions of the Act."

PROFESSIONAL PHARMACY VS. "COMMERCIAL PHARMACY."

THE judge's charge to the jury in the "Separation Proceedings" presented most interestingly in the June number of the Druggists Circular, recites that divorcement shall not be granted unless the jury is convinced; that the public will be better served by separation of professional from "commercial pharmacy;" that the physician will be better served by this separation; that the pharmacists, both professional and "commercial," will be benefited by it.

Pharmacy cannot be defined without ascribing some relation to medicine; dealing in articles, foreign to pharmacy, is frequently alluded to as "commercial pharmacy." Such erroneous designation should be discontinued. However, accepting of the term "commercial pharmacy" in the judge's charge, as quite generally applied, a jury could readily vote in the affirmative on each of the points and still the sixth argument of "Defendant's Counsel," "that it is impossible to secure the legislation necessary to bring about the proposed divorce," would render the decision of the jury valueless—a clergyman can sell paper dolls, if he desires to do so. The interesting brief should elicit many expressions and arguments of value.

The topic presents one of the most important problems pharmacists must solve and is deserving of careful consideration. The reference to the sixth argument does not imply that legislation cannot *aid* in the establishment of pharmacies and drug stores, but *infers* that a pharmacist may sell articles of merchandise if he is so disposed. If State laws would fix different standards for pharmacists by qualification than for those who do not care to dispense or sell medicines separation would be promoted. The change, however, would be very gradual and largely determined by the inclination of those who hereafter engage in the business. Law did not provide for specialization in the practice of medicine; however, specialization is the order of the day in that profession.

With the addition of numerous side-lines and the greater opportunity for encouraging such business, pharmacy is being neglected in many stores. It would seem that a discussion of the question of separation offers a most interesting topic for association meetings and, by the way, for the House of Delegates. A change will come, whether we direct or not, for the progress of medicine demands higher qualification of pharmacists; on the other hand, the income of stores is increased by sales of merchandise and as a result, proprietors encourage such business. The incompatibility is becoming more pronounced, evidenced by more frequent discussion of the subject.

THE HOUSE OF DELEGATES, A. PH. A.

ADDITIONAL INFORMATION.

H. P. HYNSON.

The Chairman of the "Committee on Investigation" is grateful for a large number of helpful comments on the proposition to make of the House of Delegates a central body for correlating the state pharmaceutical associations, through delegates, and thereby connect the A. Ph. A. directly with all sections of the United States and make it truly representative of the pharmacists of every section of our country; immensely increasing membership and interest in the parent body, as well. It is hoped that the various phases of pharmacy, as represented by the specialized national associations will also be correlated and more closely connected with the A. Ph. A. through the enlargement and extended scope of the Drug Trade Conference.

If some such combinations are not effected under its auspices, the usefulness of the American Pharmaceutical Association will soon pass entirely away through the specialization of effort in the several national associations, as pointedly witnesseth the reading of papers on strictly scientific pharmaceutical subjects at the last meeting of the National Association of Manufacturers of Medicinal Products; the able treatment of commercial problems by the National Wholesale Druggists Association; the elucidation of drug store practice by the National Association of Retail Druggists; the discussion of pharmacy laws by the National Association of Boards of Pharmacy and the control of the teaching of pharmacy by the American Conference of Pharmaceutical Faculties. If the American Pharmaceutical Association does not succeed in correlating and closely attaching to itself the active, energetic state associations, these will, naturally, form sectional unions of great importance.

The conditions surrounding the A. Ph. A. are now very different from those surrounding it when it was formed and when it was the only national body and when there were no state associations and only a few college associations and one local apothecaries' association. Natural and useful pharmaceutical associations, in great profusion, have been formed for every phase of pharmacy and for every geographical section of pharmacy and the one distinct mission left for the A. Ph. A. is to centralize all other important pharmaceutical organizations around itself, without detriment to any and to the greater usefulness and greater strength of all. This is the time with its opportunity, once lost, forever gone.

Dr. James H. Beal, the original promoter and organizer of the House of Delegates, kindly comments as follows:

"I think very favorably of the proposition to restrict the number and character of organizations to be given representation in the House and to declare more specifically what the functions of the House shall comprise.

At the time the resolutions creating the House of Delegates were adopted, I felt that it was a mistake to make its composition as heterogeneous but yielded on this point to avoid endangering the passage of the resolutions, believing that in time the defect would be recognized and corrected.

The great difficulty in making the change is the one which you point out, namely, the possible opposition of some of the institutions and local organizations to being excluded from

the House after having once been admitted thereto. Do you not think it would be possible to at least partially satisfy such objections by inserting in the By-Laws a section providing for the reception of FRATERNAL DELEGATES from bodies not included in the membership, giving to such fraternal delegates the privileges of the floor under more or less restricted conditions?

I believe, also, that the membership should include certain of the general officers of the A. Ph. A. as ex-officio members, and possibly several additional members elected by the Council. Some provision of this sort, it seems to me, is necessary to form a connecting link between the activities of the House and those of the Council.

I do not feel at present that I would insist strongly upon the changes suggested above, but have offered them merely for your consideration.

I trust that your Committee will be able to plan something that will result in converting the House of Delegates into an active and efficient body."

Mr. Joseph W. England, Secretary of the Council, writes:

"I have read with much interest your plea for a change in the character of membership of the House of Delegates, and your plan of procedure, in its essentials, appeals to me very strongly. It is clear, rational, and convincing.

In response to your request to make comments I would like to submit the following, not as the Secretary of the Council, but as member of the Association:

The idea of a House of Delegates originated in the fertile brain of Dr. James H. Beal, enroute with Dr. Henry M. Whelpley, from St. Louis to Denver, in August, 1912, to attend the Denver meeting of the Association.

At this meeting the plan was presented, and freely discussed, and after a number of modifications, the House of Delegates was created, being organized on August 21st, 1912.

It was generally recognized that the plan adopted was in the nature of an experiment, and that changes would have to be made in the near future, and so that these could be readily made, the House of Delegates was created by RESOLUTION of the Association, and not by amendments or additions to the existing by-laws.

Experience has shown that the creation of the House of Delegates was a long step forward, but the initial mistake was made in attempting too much. The membership was made entirely too inclusive. Representation should have been confined to State Associations and the local branches only. As you point out, the delegates of the national bodies,—pharmaceutical, chemical, medical and governmental, should be recognized at the general sessions of the Association and given the privileges of the floor, as heretofore.

As you indicate in your able paper, the 40 or more state associations have the same objects and the same comprehensive character of membership, as has the American Pharmaceutical Association. There is no class distinction. All pharmaceutical interests are represented in the membership. If the States can be induced to 'rally around the flag' of the A. Ph. A., it would be a long, long step forward toward a union of state and national pharmaceutical bodies, with a consequent betterment of all scientific, educational, legislative and commercial interests, as you point out. And that they can be so induced, is shown by the fact that at the Detroit (1914) meeting of the House of Delegates, 36 state associations were represented.

Little argument is needed to show that if active co-operation can be secured between the state pharamaceutical associations and the A. Ph. A., great good must result to both.

Personally, it seems to me that it would be a mistake to confine the proposed representation of the House of Delegates to the state associations only. Why not have the House of Delegates represent, not only state interests, but also local interests AS EXHIBITED IN THE LOCAL BRANCHES OF THE AMERICAN PHARMACEUTICAL ASSOCIATION; the members necessary to form a branch, however, should be reduced from 25 to 15."

Dr. Edward Kremers, of the University of Wisconsin, writes:

"I was surprised to learn how incongruous the house of representatives is. I am heartily in favor of placing the state associations in the closer touch with the A. Ph. A., but I am not convinced that a satisfactory arrangement can be effected until the membership in the state association also implies membership in the national association. However, the subject

is worthy of our careful attention and should receive all consideration possible in the near future."

Dr. F. J. Wulling, of the University of Minnesota and President of the A. C. of Ph. F., writes:

"Before receipt of yours I had regarded the House of Delegates as a factor likely merely to increase the complexity of our manner of doing business. Your suggestions and arguments, however, have much merit in them and, if it can be brought about that this House of Delegates become thoroughly representative of the state associations, I would be very glad to give my approval to a strengthening of the House. I have for a long time favored the closer affiliation of state associations with the A. Ph. A. and I would give my warmest support to any movement that would bind the state associations and the A. Ph. A. into a federation, in which the links would be substantial enough to create a unity of interest that would accomplish the big things for pharmacy as yet unaccomplished. Go ahead."

Dr. J. A. Koch, of the Pittsburgh College of Pharmacy and Chairman of the Executive Committee of the A. C. of Ph. F., writes:

"I have read with much interest your communication referring to the House of Delegates. Fundamentally your object is ideal and I only hope that it can be carried through. I fear though that the greatest difficulty will be to find something for the House of Delegates to do. Unless you can, in some way, tie them to the parent Association by assigning to them some definite work of some importance, I fear it will be difficult to create much interest in the body."

William Mittelbach, member of the Missouri Board of Pharmacy, prominent in all pharmaceutical bodies and loyal to all, communicates the following:

"Your proposal to change membership or representation in House of Delegates of the A. Ph. A. is an improvement. So far, however, I can not see the necessity of such a body at all. A strong committee appointed by the parent body can do all the work that is intended for the House of Delegates and for which it sprang into existence. We have, for years, complained of too many sections, and yet, under the slightest provocation, so to speak, launch still others and more cumbersome ones. Therefore, if we must continue this new branch of the A. Ph. A. let us simplify it by following your suggestion."

Dr. L. E. Sayre, of the University of Kansas, writes:

"As a loyal member of the Association, I am anxious that all of the sections of the Association shall be put in a position of maximum efficiency and would be glad to favor any changes which the mature judgment of your Committee deems advisable.

Now, as I look at it from my point of view, one of the many objects in giving to state associations exclusive control of the House of Delegates would be to help stem the tide of this spirit of iconoclasm.

It would seem to me that we should not ignore the right of full representation of the various branches of the A. Ph. A. now distributed over the United States. These branches should be encouraged just as the American Chemical Society encourages its various branches. I may say incidentally, that I have been trying to start a branch of the A. Ph. A. in Kansas City for a number of years and have made some progress in that direction and am in hopes that in the course of another year I may be able to secure this."

Dr. F. E. Stewart, loyal pharmacist and expert in patent and copyright laws, comments:

"You will remember that Prof. J. U. Lloyd when he was President of the A. Ph. A. advocated a re-organization of the Association for the purpose of limiting its members to retail druggists.

Now, you have gone to the other extreme and are advocating a plan, which, if carried out logically, would place the control of the Association in the hands of the proprietary medicine interests. Am I right about this? . . . I am wondering just what argument you are using in your own mind to justify you in opening the door of the A. Ph. A. to everybody."

F. W. Nitardy, Denver, Ex-Chairman of the Practical Pharmacy and Dispensing Section, A. Ph. A., writes:

"Received your paper in regard to the House of Delegates of the A. Ph. A. and wish to say, I am in hearty accord with your suggestion and hope you and your Committee will succeed in making this proposition a reality."

Prof. Charles H. La Wall, Philadelphia, always helpful, tersely lends his endorsement:

"Your recent communication was received and I heartily endorse the plan proposed therein."

Judge Charles M. Woodruff, Detroit, Michigan, Secretary and Treasurer of the National Drug Trade Conference, writes:

"I am in entire accord with your view that this House of Delegates should be composed only of delegates from state associations who are members of the American Pharmaceutical Association. I must frankly say, however, that I am not in sympathy with your proposition to organize a National Drug Trade Congress, for it seems to me that the present National Drug Trade Conference, which has done such good work already, fills every want; at least so far as legislation is concerned."

Prof. C. B. Jordan, of the Purdue University, lends encouragement:

"I am heartily in accord with your organizing plan of county, state and national associations similar to the American Medical Association and I sincerely hope that you will be successful in the working out of the plan. If I can be of any assistance to you I will be glad to have you call upon me."

From Secretary W. B. Day:

"I am heartily in favor of the suggestion you make that membership in the House of Delegates be limited to representatives of the State Pharmaceutical Associations who are also to be members of the A. Ph. A.

I believe that this would be a great improvement over the present heterogeneous assemblage. Delegates from the National Association might well be accorded recognition at the general sessions of the Association.

I believe that if your suggestion is adopted, it will do much toward bringing the State Associations into closer affiliation with the A. Ph. A., an object which is well worth an earnest effort to accomplish."

ATTEMPTS AT EXPLANATIONS.

To Dr. Beal and Mr. England: If more than one, single, class of delegates are admitted into the proposed REFORMED House of Delegates, just then will the principle of equal representation be violated and double representation, in many instances, creep in. "Fraternal Delegates" might, by resolution, be heard, but they should not be admitted to membership nor allowed to vote.

It is to be hoped that "SPECIAL" members, such as officers of the A. Ph. A., will not be provided for. The House of Delegates should not represent the A. Ph. A., but it should be a part of the A. Ph. A., in which the pharmacists, broadly described, of the various states, may be represented and EQUALLY represented. There is actually no need of but one kind of delegate for, most fortunately, every other form of local or national association, but the state associations, has orderly representation, either directly or indirectly, in the A. Ph. A. Let us try the restricted form first. Start right and we will *be* right.

To Dr. Kremers: It is not believed that we will be able to induce all individual members of the state associations to become members of the A. Ph. A. before the state associations and their members become more closely associated with the A. Ph. A. and more helpfully interested in it. The acquisition of members from the state associations will be large, but the acquisition will be gradually progressive. No very great increase in membership in the

A. Ph. A. would seem to be possible, excepting through the means of some sort of local associations, which will act as feeders to the general body.

To Dr. Wulling: Yours is exactly the conception that promises a reasonably sufficient organization of pan-pharmacy.

To Dr. Koch: There is not the slightest doubt, in the minds of those who have given the subject thorough study, but that right now, interesting and profitable programs for the next five years can be easily mapped out, such programs as will keep a properly formed house of delegates busy one full day or longer each year. Two such programs are submitted herewith.

To Mr. Mittelbach: Unfortunately, your conception of the A. Ph. A., its scope and possibilities, is such as was properly held by its most loyal members fifty years ago. The opposition to attaching the state associations to the A. Ph. A. is the opposition, if it were possible, to the union of the states into our National Government and such as would be against the acceptance of new states. The proposition to create a general reference committee or of making the House of Delegates a body of general reference, is directly against the prevailing tendency toward specialization. The same principle, followed in our general government, would refer to Congress all those particular matters which are now separately taken care of by the special departments or divisional bureaus. This general reference idea is a distinctly backward step and will rob the specialized sections, of the Association and its especially organized committees of their real and truest missions. The House of Delegates should become a *special* reference body for inter-state subjects, only.

To Dr. Sayre: Personal explanations have been made to you, which have no general interest. Your suggestion that the local branches have representation in the House of Delegates is answered in the Chairman's original communication. The local branches have full and unusual representation in the Council. Should they also be represented in the House of Delegates, they would be given undue power and unwarranted importance and the members of these, who are, in nearly every instance, it is believed, also members of their state association, would have double representation in the House of Delegates, which would be, obviously, unfair.

To Dr. F. E. Stewart: The true stamp of humanity is seen upon you when it is discovered that you CAN, sometimes, go wrong. Evidently you have not been nor are now well acquainted with the prevailing conditions, as they relate, especially, to the personnel of the membership of the A. Ph. A. It is much more catholic, as it should be, than you seem to know. You are advised to get acquainted with the members and discover their peculiar lines of action. The door has been WIDE open, FORTUNATELY, for many years. Pharmacy is a mixture and we must accept it as such, trying, always, to improve the character of the component parts.

To Judge Woodruff, Mr. Nitardy, Prof. La Wall, Prof. Jordan and Prof. Day: You and all who have favored the committee with comments, are heartily thanked for your helpful co-operation. Your continued interest is needed and earnestly solicited. The subject should be patiently discussed at all state association meetings and careful conclusions developed.

SUGGESTED PROGRAM FOR THE HOUSE OF DELEGATES 1915 MEETING.

MORNING.

Presidential Address—Subject: The history of pharmaceutical organization in the United States, with reference to its development consistent with specialization in pharmacy, as well as with the growth and the betterment of the country.

Address—The Correlation of 48 State Associations and its Possibilities.

Report of the Committee on Credentials.

Resolutions and Subjects for Discussion, offered by the several delegates, with comments. All to be referred to a special committee for arrangement and presentation.

AFTERNOON.

Report of Special Committee appointed "To investigate the House of Delegates and to see if its usefulness could not be improved," with presentation of amendments to the by-laws to be discussed and acted upon at the next session.

A Symposium—How far can state laws, applying to pharmacy, be made to conform to similar National laws and would such an agreement make uniform state laws?

(a) Pure Food and Drugs Laws.
(b) Anti-Narcotic Laws.
(c) Poison and "Bichloride" Laws.
(d) Labeling and Weights and Measures Laws.

Report of committee appointed to arrange and present resolutions and subjects for discussion. Discussion of such as are presented.

EVENING.

Unfinished business, communications.

A Symposium—Would the establishment of a system of legalized dispensing service fees, as now prevails in Germany, be helpful to the pharmacists of America? Also, would the practice of making a distinct charge for dispensing services and a distinct cost charge for merchandise tend to give the pharmacist better professional standing?

MORNING.

Presidential Address—Subject: Embracing a report of the progress made in correlating the state associations and recommendations for the betterment of prevailing conditions.

Address—Why all members of the state associations should also become members of the American Pharmaceutical Association, reciting the benefits to follow this completed membership.

Report of the committee on credentials.

Resolutions and Subjects for Discussion offered by the several delegates, with comments. All to be referred to a special committee for arrangement and presentation.

AFTERNOON.

Report of Committee on Uniform State and National Laws. And a discussion of the forms of laws presented by the Committee.

The existing relationship in the several states between the medical and pharmaceutical professions. Suggestions for the betterment of such conditions.

Report of committee appointed to arrange and present resolutions and subjects for discussion. Discussion of such as are presented.

EVENING.

Unfinished business, communications.

A Symposium—The advantages to accrue to retail pharmacists from co-operating with other retail merchants and from taking part in retail merchants associations or bureaus, also reporting of "smart things" done by some of the state associations that might be helpful to others.

Form of resolution that may be discussed at state association meeting:

WHEREAS, The correlation of the state associations and their attachment to the A. Ph. A. would greatly enlarge the scope and increase the usefulness of the several state associations and would also increase the strength and influence of the American Pharmaceutical Association; and

WHEREAS, Such correlating and attachment would be in line with the progress of the times and consistent with all forms of effective organization; therefore, be it

Resolved, That this Association in convention assembled does hereby endorse the proposition to make the House of Delegates a body composed exclusively of representatives of the state associations; and be it

Further Resolved, That the delegates of this Association are hereby instructed to lend all the assistance in their power toward the formation of a House of Delegates composed of state association representatives, only.

Respectfully submitted,

HENRY P. HYNSON, Chairman.

A FEW ABSTRACTS OF SUBJECTS PERTAINING TO PRACTICAL PHARMACY OF THE CURRENT YEAR, EVIDENCING THE VALUE OF THE JOURNAL OF THE A. PH. A. TO THE RETAIL DRUGGIST.*

CHESTER A. DUNCAN, P. D., DALLAS.

The following abstracts have been taken from the Journal of The American Pharmaceutical Association, beginning with the issue of January, 1914:

THE MAKING OF TABLETS BY THE RETAIL DRUGGIST.

BERNARD FANTUS, M. D.

There are three influences at work destined to change the relation of the retail druggist to the tablet; they are: First, the use of solid fat as a cohesive and lubricant; second, candy medication; third, inexpensive tablet machines.

The value of cacao butter and low-melting point paraffin as cohesives and lubricants are discussed, these agents making it possible for the retail druggist to include tablets along with pills and capsules as extemporaneous products. The increasing demand for sweet tablets and the large number of drugs that can be dispensed in this manner offers a practical opportunity for extemporaneous preparation. Cheap and efficient machines for tablet making are available.

The author's conclusion being that it would pay pharmacists to equip themselves with a tablet machine, discontinue carrying in stock a large number of miscellaneous tablets and that he will be able to prepare sweet tablets as a form of candy medicine that physicians will readily take up as soon as a reliable source of supply has been secured. January, 1914.

SYRUP OF FERROUS IODIDE.

W. C. ALPERS, SC. D.

As the result of a large number of experiments the presence of a catalyzer, as a coil of bright iron wire, controls the violence of the reaction. Neither invert sugar nor glucose are preferable to granulated sugar. When made from best ingredients does not need a preservative. When dispensed in bottles that will be opened several times a day, the addition of one-half of one percent of citric acid is advisable, provided the quantity will be consumed in thirty days. The slight change in color during the prescribed time is negligible. March, 1914.

A NEW AND SATISFACTORY FORMULA FOR LIQUOR ANTISEPTICUS.

CHARLES H. LA WALL, PH. M.

The pharmacopœial preparation has been criticized and justly so for being harsh and an unpleasant preparation. A formula is presented which is the result of numerous experiments: Eucalyptol, 5.0 cc., Methyl Salicylate, 1.2 cc., Oil thyme (white) 0.3 cc., Thymol, 1.0 gm., Menthol, 1.0 gm., Sodium salicylate, 1.2 gm., Sodium benzoate, 6.0 gm., Boric acid, 25.0 gm., Fluidextract golden seal, 2.0 gm., Alcohol, 300.0 cc., Water, q. s. to make, 1000.0 cc Make the solution according to the art of the pharmacist, reserving 60.0 cc. of the alcohol to add to the clear filtrate. Kieselguhr or talc may be used as a filtering medium. April, 1914.

A NEW AND SATISFACTORY FORMULA FOR LIQUOR ANTISEPTICUS ALKALINUS.

CHARLES H. LA WALL, PH. M.

The N. F. preparation is unnecessarily high in solids and alkalinity. The formula submitted consists of: Sodium bicarbonate, 5.0 gm., Sodium benzoate, 10.0 gm., Sodium sali-

*Read at recent meeting of Texas Pharmaceutical Association. The object of the paper is evident. The reprinting is for the purpose of suggesting to other members a means for enlisting an interest in those who are not members of the American Pharmaceutical Association.

cylate, 10.0 gm., Sodium borate, 30.0 gm., Thymol, 0.2 gm., Menthol, 0.2 gm., Eucalyptol, 0.2 gm., Methyl salicylate, 0.2 gm., Alcohol, 40.0 cc., Glycerin, 150.0 cc., Water, q. s. to make 1000.0 cc. To color, red cudbear may be used, or a more resistant color which will not bleach out so quickly with hydrogen dioxide solution, the color known as vegetable red, which is sulphonated orcin, may be used. April, 1914.

LOTIO ALBA.

OTTO RAUBENHEIMER, PH. G.

The author calls attention to the hospital preparation of zinc oxide, solution lead subacetate, glycerin and lime water. This preparation is not intended to be used against acne, pimples, etc., Lotio Alba being composed of zinc sulphate, sulphurated potash of each 5.0 gm. and water or rose water 125.0 cc. The composition of sulphurated potash is discussed, as the value of Lotio Alba depends upon its strength.

Difficulties arising in having this preparation properly prepared suggests the precautions of filtration of separate solutions of zinc and potassa, finely divided precipitate by dilute solutions slowly pouring the potassa solution into the zinc solution with agitation. The pharmacist can prepare small quantities of sulphurated potash and although an unstable chemical is very stable in solution and it is recommended that this be kept as a stock solution for making Lotio Alba. May, 1914.

THE LINIMENTS OF THE U. S. P. AND N. F.

THOMAS LATHAM.

Comments and suggested formulæ.

Linimentum Ammoniæ to consist of ammonia water, liquid paraffin oil and oleic acid.

Linimentum Belladonnæ, camphor decreased to 37.5 gm. with the addition of Linimentum Saponis.

Linimentum Calcis, the lime water to be of the best and placed in the bottle first.

Linimentum Camphoræ, yellow paraffin oil to replace the cotton seed oil.

Linimentum Chloroformi, replaces the present formula with one consisting of chloroform and methyl salicylate in paraffin oil.

Linimentum Saponis, directs that this be made by solution of soap in alcohol and adding other ingredients.

Linimentum Saponis Mollis, methyl salicylate to replace the oil of lavender flowers.

Linimentum Terebinthinæ, petrolatum to replace rosin cerate as diluent for oil of turpentine.

Linimentum Aconiti et Chloroformi, N. F., can be improved by adding menthol.

Linimentum Ammonii Iodidi, N. F., present formula replaced by ammonium iodide in soap liniment.

Linimentum Iodi, N. F., considered obsolete.

Linimentum Opii Compositum, N. F., on account of the high price and comparative uselessness of tincture of opium and oil of peppermint the former is reduced from 100 cc. to 10 cc., and the latter replaced by menthol. Tincture of arnica, saponin and linseed oil are added.

Linimentum Saponato-Camphoratum, N. F., soap liniment has taken its place. White laundry soap may be used in making, as it congeals readily.

Linimentum Terebinthinæ Aceticum, N. F., the formula slightly modified as to quantities and saponin added.

Formulæ are also given for Analgesic Liquid Balm, University Rub, Boston Liniment or Veterinary Liniment. February, 1914.

A NOTE ON THE VALUE OF PRESERVATIVES IN SYRUP FERROUS IODIDE.

GEORGE M. BERINGER, PH. M.

Tartaric and citric acids in one tenth of one percent solution, serve well as preservatives. If carefully made no preservative is needed. However, to overcome careless manipulation it is deemed advisable to use a preservative. Hypophosphorous acid has the advantage of a reducing value which is not possessed by organic acids. It has the disadvantage that in the strength recommended it will act upon sugar and darken the syrup. This could be overcome

by using glycerin for a portion of the sugar. N. J. Phar. Ass'n., 1914. Jour. A. Ph. A., July, 1914.

MAGMA MAGNESIA, N. F.

SAMUEL T. HENSEL, PH. G.

The formula of George M. Beringer is changed in that a larger excess of sodium hydroxide is used to insure complete chemical reaction, the solution of the magnesium sulphate poured into the soda solution as directed in the Beringer formula and in addition the mixed solutions and precipitate are boiled for fifteen minutes. Artesian water used for washing the precipitate instead of distilled water as each gallon of precipitate requires about twenty-five gallons of water for washing. The need for a larger quantity of soda being explained by the peculiarities of mass action. August, 1914.

GLYCERITE OF BISMUTH.

WILBUR L. SCOVILLE, PH. G.

A corrected formula and assay process for this product.

The formula is simply a modification of the present one and in order to furnish a product of uniform strength the amount of bismuth is determined before the final quantities of vehicle are added in such proportion that each 100 cc. of product will represent the equivalent of 12.8 gm. of bismuth oxide. The bismuth determination being made by precipitating a measured portion of the glycerite with hydrogen sulphide, washing and weighing the residue. September, 1914.

THE PHARMACY OF ADRENALIN.

C. P. BECKWITH.

The chemistry of this sensitive substance is explained, being characterized as an amine base, an alcohol and a phenol. The solubility of the pure substance is given. It forms salts with acids which are usually very hygroscopic and difficult to preserve in dry form. Solution of these in alcohol or water being the usual manner of dispensing. The commercial solution being a solution of 3 to 1000 adrenalin chloride in physiological salt solution with one-half of one percent chloretone. This retains its activity for a long time if stored away from heat, light and air. Oxidizes on exposure to air as indicated by the change in color from pink to red and then to brown with a brown precipitate. As long as the undiluted commercial solution has not become deeper in shade than pink the loss of activity is practically negligible.

It is advised that adrenalin be dispensed alone and not in mixture. Incompatibilities mentioned are, alkalies and oxidizing agents are chiefly to be feared. In this category are such substances as oxygen, chlorine, bromine, iodine and their oxyacids, permanganates, chromates, nitrates and salts of readily reducible metals. Iron even in traces must be avoided and because of its distribution is extremely troublesome. Nose and throat specialists order spray solutions containing alkalies which if dispensed will render the adrenalin inert. In making dilute solutions sufficient hydrochloric acid should be added in such proportion that the total volume will contain one one-hundredth of one percent acid. November, 1914.

A FORMULA FOR A NEW TYPE OF SALINE ANTISEPTIC SOLUTION.

CHARLES H. LA WALL, PH. M.

Recommended as an alkaline and saline solution containing but little alcohol. Consisting of Sodium chloride, 5.0 gm., Sodium borate, 5.0 gm., Sodium bicarbonate, 10.0 gm., Oil of spearmint, 1.0 cc., Oil of eucalyptus, 0.5 cc., Menthol, 0.1 gm., Alcohol, 5.0 cc., Fluidextract of hydrastis (aqueous) 2.0 cc., Water, q. s. to make 1000.0 cc. Disolve the salts in 750.0 cc. of water and the oil and menthol in the alcohol. Mix the alcoholic solution of oils with 5.0 gm., of magnesium carbonate and triturate gradually with the aqueous solution. Filter and add the fluidextract and finally pass enough water through the filter to make 1000.0 cc. February, 1915.

IODINE OINTMENT—DATA AND METHOD OF ASSAY.

LEO. H. FRIED, PH. G., PHAR. D.

A method of assay for this ointment is given together with a report as to observations made concerning the absorption of iodine by the lard. Immediately after making, assay

showed 1.11 percent loss of free iodine. At ten days 1.16 percent and at eight months 1.20 percent. The maximum absorption taking place in ten days. May, 1915.

NEW METHOD OF MAKING SYRUPUS HYPOPHOSPHITUM AND SYRUPUS HYPOPHOSPHITUM COMPOSITUS.

F. A. UPSHER SMITH, PH. C.

These new formulæ are proposed with the view that it will be unnecessary for the druggist to carry in stock but one of the hypophosphites, namely calcium hypophosphite, the other hypophosphites are made in the process by reaction of potassium, sodium, iron and manganese sulphates, upon the calcium salt in molecular proportions necessary to form the corresponding hypophosphites, an excess of the calcium salt being used sufficient to represent the correct amount in the finished product. Minn. State Phar. Ass'n., Jour. A. Ph. A., May, 1915.

AMPULS.

HERMAN H. NORTH, PH. G.

Evolution of the word, history and forms, glass used and tests, manufacture and cleansing empty ampuls, methods of filling by gravity, pressure, vacuum, testing the sealing, sterilization, solutions decomposed and those not decomposed by heat, are the paragraph headings of a meritorious thesis and worthy of every practical pharmacist's attention. May, 1915.

CURRENT REVIEW OF PHARMACEUTICAL JOURNALS FOR APRIL, 1915.*

J. W. ENGLAND.

THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Preliminary Note on a New Pharmacodynamic Assay Method, by Paul S. Pittenger, Phar. D., and Charles E. Vanderkleed, Phar. D. The authors propose the use of Carassius Auratus (Gold Fish) as test animals for the digitalis series of drugs, claiming that gold fish are exceedingly sensitive to variations, that the weight of the fish may be disregarded in making the test, that the individual variations in the susceptibility is much less than that of guinea pigs and frogs, and that the gold fish method is the simplest so far proposed and can be easily carried out by those not skilled in pharmacodynamic work. Furthermore, the animals can be procured at all seasons of the year and are inexpensive.

Examination of Calycanthus Floridus for Alkaloids, by E. R. Miller and H. W. Brooks. The results obtained make it probable that the plant, which is widely found in the Southeastern States, contains alkaloids.

The Analysis of Cigarettes, Cigars and Tobacco, and the Use of Lloyd's Reagent in the Determination of Nicotine, by Azor Thurston. A comprehensive series of analyses of twenty-six brands of cigarettes, both filler and paper.

Estimation of Calomel, by R. I. Grantham. Three methods were studied, the third one yielding the highest theoretical results.

Some Factors in Drug Absorption in Frogs, by W. F. Baker, M. S., M. D. A paper showing the variation in individuality of frogs with reference to drug absorption. The matter of absorption is largely due to the health of the frogs and the conditions under which they are kept.

Stillingia Sylvatica, by E. R. Miller, R. I. Brooks and C. P. Rutledge. A study of the root of Stillingia Sylvatica, with especial reference to the presence of the alkaloid stillingine.

Cannabis Sativa, by H. C. Hamilton, M. S. The author discusses the question, "Is the medicinal value of the drug found only in the Indian grown products?" and he concludes

* Read before Philadelphia Branch, May 11, 1915.

that American Hemp contains the same active ingredients as Indian Hemp, and that, if equal care is used in selecting the proper part of the drug for experiments, no material difference in activity will be found between the extracts of Indian and of American Hemp.

Estimation of Yellow Phosphorus, by H. Engelhardt and O. E. Winters. Methods for the determination of Phosphorus in Phosphorus Resin, Phosphorus Paste, Phosphorus Pills and Elixir of Phosphorus.

Pharmaceutical Education, by Frank R. Eldred. A study of methods of training for special branches of pharmaceutical work, with special reference to the requirements of modern pharmaceutical manufacturing and drug inspection.

Pharmaceutical Education, or the Education of the Pharmacist; Which Shall it be?" by Jacob Diner. A study of education as related to pharmacy and the pharmacists, differentiating between the education of the pharmacist and pharmaceutical education.

Forty-five Years of Manufacturing Pharmacy, by Frank O. Taylor. A sketch of the history of manufacturing pharmacy of this country, with special reference to the development of Parke, Davis & Co.

The Study of the History of Pharmacy by Students of Pharmacy at American Institutions of Learning, by Edward Kremers. An important paper upon the scope of the courses and the methods of instruction of historical pharmacy, with a plea for greater attention by schools of pharmacy to the subject.

Mineral Waters, by Julius Greyer. An able and comprehensive paper on this subject.

Restrictions in the Distribution of Poisons, by Carl T. Buehler, Ph. G. The author proposes two schedules of poisons, one to be sold on a physician's prescription only, and the other not, but to be recorded in a poison register.

Should the Retail Druggist Manufacture His Own Preparations, or Buy Them? by Charles J. Clayton. The author discusses the subject pro and con, believing that there are two sides to the question.

Some Pharmaceutical Notes, by William R. White, Ph. C. A series of practical notes on Oleate of Mercury, Spirit of Nitrous Ether and Fowler's Solution.

Difficult Prescriptions, by J. Leon Lascoff, Phar. D. A study of seven prescriptions with methods of preparation.

Red Gum, by John K. Thum. A valuable, practical paper on this useful astringent.

Pharmacopoeias and Formularies of the World, by R. H. Needham. An important list of Pharmacopœias and Formularies published both in the United States and abroad.

Further Facts About Drug Importations, by Harry B. French, President of the Smith, Kline & French Co. An appeal for an amendment of the Federal Food and Drugs Act to protect the importer of drugs against certain acts perpetrated at the present time by the officials of the Government of the United States at ports of entry, and for the purpose of correcting inequalities of administration of the different ports.

Professional Pharmacy from the Viewpoint of the Commercial Laboratory, by Frank E. Stewart, Ph. G., M. D. A plea for co-operative work between the great commercial houses engaged in pharmacal and chemical industries and the medical profession, through its universities, laboratories, hospitals and clinics.

The House of Delegates of the A. Ph. A., by Prof. Henry P. Hynson. An exceedingly important communication urging a general discussion of the functions of the House of Delegates of the American Pharmaceutical Association and inviting suggestions regarding its betterment.

The Percentage of Moisture Lost in the Preparation of Some Official and Unofficial Drugs, by Edwin L. Newcomb, P. D. A valuable compilation of data concerning the moisture lost in the drying of vegetable drugs.

A Criticism of the United States Pharmacopoeial Descriptions of Vegetable Drugs, by Chalmers Joseph Zufall.

The Women's Section and Women Pharmacists, by Zada M. Cooper. A plea for the growth and development of the Women's Section of the American Pharmaceutical Association and the more extended employment of women in pharmaceutical work.

AMERICAN JOURNAL OF PHARMACY.

The Qualitative Separation and Identification of Some Oxymethylanthraquinones, by E. Monroe Bailey. A study of the color principles of Senna, Rhubarb, Aloes and the various species of Buckthorn.

Standardization of Sodium Thiosulphate Volumetric Solution, by Joseph L. Mayer.

AMERICAN DRUGGIST.

Solving the Coal Tar Derivative Problem.—An editorial upon a subject which is exercising the deep interest of the American chemical industries of this country.

Advertising an Ethical Drug Store, by J. R. Moffett. An interesting chat upon the ethical conduct of the drug business.

How to Sell Disinfectants Over the Counter, by John Zeig, M. D. A practical paper on this important subject.

Pharmacy and Pharmacists, by John F. Patton. A brief and interesting paper by John F. Patton of York, Pa., a fine type of the old-time pharmacist and a former President of the American Pharmaceutical Association.

THE DRUGGISTS' CIRCULAR.

The New British Pharmacopoeia, by H. H. Rusby, M. D. In this paper Dr. Rusby discusses with characteristic ability the salient features of the new British Pharmacopœia pertaining to vegetable drugs.

Skin Foods and Toilet Cream, by H. C. Bradford. A practical paper on this subject.

MERCK'S REPORT.

Perfumery and the Chemist, by Edward T. Heiser. A study of synthetic perfumes, the author predicting that the time will not be distant when the flower scents will be all synthetical perfumes. "The florist of tomorrow will be the chemist; the garden will be the laboratory; and in crystalline form, among coal-tar stills and complex pots, we shall gather, 'Roses red and Violets blue, and all the sweetest flowers that in the forest grew.'"

THE JOURNAL OF INDUSTRIAL AND ENGINEERING CHEMISTRY.

Symposium on the Contributions of the Chemist to American Industries.—An exceedingly important collection of papers, covering but a few of the industries benefited by the science of chemistry, but they bring into strong relief the growing importance of the services of the industrial chemist and chemical engineer. The papers are too long to abstract, and should be read in the original.

THE JOURNAL OF BIOLOGICAL CHEMISTRY.

Human Milk, by Alfred W. Bosworth. An important study upon the acidity of human milk, the serum of human milk and the principal compounds of human milk.

The Estimation of Fat, by Helman Rosenthal and P. F. Trowbridge. A new method for the determination of fat in animals and food stuffs by means of a method of saponification. The method is so accurate that it can be used for the determination of fat in blood, which is not possible with the usual methods.

THE PERFUMERY AND ESSENTIAL OIL RECORD.

The number includes as usual a full market report. While synthetic chemicals for perfumery are generally very scarce, and command high prices, there is also a notable shortage in several essential oils; otherwise the most interesting feature of the report is the firming up towards the close of the Sicilian essences and the strained conditions between growers and dealers in both American peppermint and French lavender oils.

The Little Green Devil (Absinthe).—A remarkably interesting article upon a weed that for thirty centuries or more has been a type of all that was bitter, that has brought tens of thousands to a maniac's grave, and, incidentally, not a few into sounder health, that has inspired a novel by Miss Marie Corelli and given its name to a London suburb and convict prison. Since the present European war broke out the drinking of absinthe in both the French army and navy has been effectually stamped out, while the Government has supplemented the effort by absolute prohibition of the sale. According to published figures "absinthe ordinarie" contains 47.6 percent of alcohol, "absinthe demi-fine" 50 percent, "absinthe

fine" 68 percent, "absinthe Suisse" 80.6 percent, and in addition to the volatile and bitter constituents of wormwood herb, these liquors contain angelica, anise and marjoram. The bright green tint of the alcoholic extract is intensified by admixture of spinach or parsley, and then toned down to a dull olive green by the addition of burnt sugar, but it is to be feared that the desirable tint of the "little green devil" is frequently obtained by mixtures of indigo and turmeric, and even by acetate or sulphate of copper and green aniline dyes. With national prohibition of absinthe in France has passed away that Parisian function, the "absinthe hour," somewhere between 4 and 6 p. m., and with it the groups of idlers, moodily gazing into the opalescent depths of the seductive poison, diluted with water. The symptoms are quite distinct from ordinary alcoholism. Absinthe appears to act directly through the higher nerve-centers, nervous symptoms being the most prominent throughout. The exhilaration first experienced passes into hallucinations, nocturnal restlessness and terrifying dreams, followed next morning by nausea and vomiting, trembling of the hands and tongue, with dizziness and general unfitness. The final condition of the victim is delirium, epileptiform convulsions and hopeless idiocy. Wormwood herb can scarcely be passed over as an unimportant herb. The yield of essential oil is from 0.2 to 0.97 percent, with a specific gravity of 0.925 to 0.955 and a refractive index of 1.460 to 1.474; the chemical constituents being thujone, thujyl alcohol, acetic, isovaleric and palmitic esters, pinene, phellandrene and cadinene.

Insects Injurious to Plants, by E. M. Holmes, F. L. S., F. E. S. A continuation of Curator Holme's very interesting article on this subject from previous issues.

THE PHARMACEUTICAL JOURNAL AND PHARMACIST.

Practical Notes on the British Pharmacopoeia, 1914, by David Gilmore. This is chiefly a report on the standards of the British Pharmacopœia for Laudanum, Spirit of Nitrous Ether and Glycerite of Oleic Acid.

A New Color Reaction for Salicylic Acid," by P. A. W. Self, B. Sc., F. I. C. The author uses equal parts by volume of 40 percent formaldehyde and concentrated sulphuric acid, cooling the mixture thoroughly. Next, moisten the substance to be tested, in a porcelain dish, with the above mixture, add a little ammonium vanadate, and stir well. If salicylic acid is present a Prussian blue color—varying in intensity with the amount of salicylic acid—appears immediately, and rapidly changes, first to a greenish blue and finally to green. If, however, no salicylic acid (or other substance capable of yielding a color reaction) is present, the color given by the reagents alone is a yellowish red or orange, which after two or three minutes begins to change to greenish yellow and finally becomes green. With 1 milligramme of salicylic acid the color is intense.

Notes on the British Pharmacopoeia, 1914, by C. W. Kemsey-Bourne, M. P. S.

Pharmacopoeia Revision, by William Kirkby, M. Sc., F. C. S., Ph. C. An excellent review of the subject of Pharmacopœias in addition to the present British Pharmacopœia. The author in his researches goes back to the sixteenth century and notes many curious facts in pharmaceutical literature. Between 1618 and 1851, when the last revision of the Pharmacopœia Londinensis appeared, there were nine revisions of it. The years when these were published were 1650, 1677, 1721, 1746, 1748, 1809, 1824, 1836, 1851. But in all there were over thirty reprints and editorials. The amount of original matter in this publication throughout the first century of its existence seems to have been quite meagre. The first issue, and subsequent ones down to 1746, consisted chiefly of matter extracted from the Antidotarium of Nicolaus de Salerno (twelfth century) and the Antidotarium of Johannes Damascenus (John Mesué, ninth century). The apothecaries before the appearance of the official medicine book, depended largely upon Serapion, Dioscorides, Galen, Paracelsus, as well as upon Mesué, Avicenna, and Nicolas. The generally unsatisfactory character of the pharmacopœia and the attitude of the physicians toward unlicensed practitioners led to the appearance of quite a large number of non-official books. Many of these are of considerable interest, because they furnished an extensive reservoir from which the editors of the London Pharmacopœia were able to draw when they decided to put together a discriminatory edition. This was the issue of 1746. The books which appeared during the previous hundred years are worthy of attention. There were commentaries on the Pharmacopœia, such as Salmon's

and Quincy's, formularies such as Radcliffe's, the so-called Pharmacopœia Bateana, Woodall's Surgeon's Mate, Schroeder's Pharmacopœia Medico-Chymica, Culpepper's English Physician Enlarged, and many similar books. Some of these were compendiums of almost everything in physic and surgery. In Woodall's Surgeon's Mate (1639) we even find poetry, of which some may make an appeal to pharmacists of today. At the conclusion of some verses called:

Certaine Chimicall Verses; or Good Will to Young Artists, From the Author, he says:

Common it is with Chymists true
their house-doves them withstand:
Fearing all will be spent in smoke,
time, goods, yea house and land.

A noyse domesticke shrill I hear,
and I dare stay no longer:
Good friends adieu till further time,
I must obey the stronger.

You Chymists wise that wived are,
be warned here by me,
Search not into this mysterie
except your female gree.

For I have found to my great smart,
when she list to contend,
Then down goes pot, yea, glass and all,
and I vow to amend.

And need sayes yeeld, there's fault in him
that stubbornly stands out
Till breech and jacket all be torne
by searching secrets out.

The author concludes his article with an earnest plea that pharmacists be represented upon the Council publishing the British Pharmacopœia.

Panama-Pacific International Exposition.

SUGGESTIONS FOR A COURSE IN MICRO-ANALYSIS AND BACTERIOLOGY FOR COLLEGES OF PHARMACY.

ALBERT SCHNEIDER.

At the Detroit meeting of the American Conference of Pharmaceutical Faculties the writer made the following suggestion in the presidential address to the Conference, "That immediate steps be taken to arrange a course in pharmaceutical bacteriology (including sterilization, disinfection and zymology) and sanitation." In harmony with the thought expressed, the following detailed outline of courses is hereby submitted. This outline is based upon the work as carried out at the California College of Pharmacy where these branches of study have been taught for a period of five years to the students taking the regular third-year course. To complete such courses in one year, certain preparation is necessary, as the regular work in the microscopical examination of vegetable drugs and other vegetable substances, and a general course in bacteriology as is given in the regular two-year course in many of the leading colleges of pharmacy. The courses are to be suitably adapted to the correlated courses in chemistry, so arranging the apportionment of the time that twelve hours per week will fall to the work in microscopy and bacteriology and twelve hours to chemistry. The proposed courses, suitably modified and adapted, should also be added to the curriculum of Public Health courses in Medical Colleges and in Universities.

The outline is submitted in the hope that it will receive the attention of all instructors in Colleges of Pharmacy, and Colleges of Medicine and in Universities, who are interested in public health work. Comments and criticisms are solicited.

Part I—Microscopical.—The microscopical examination of fiber foods and drugs.

A laboratory course of four hours each week extending throughout the college year, supplemented by lectures, reviews and special reading and seminar work. The details of the course vary somewhat from year to year. The micro-analytical methods employed in the examination of foods and drugs are similar to those of the U. S. Food and Drugs laboratories, with desirable additions and changes.

I. Examination of Fiber.

1. Vegetable Fiber.
   a. Cotton.
   b. Paste Board. Wrapping Paper. Tissue Paper.
   c. Newspaper, filter paper, etc.
   d. Book-paper, Banknote, etc.
   e. Writing Paper.
   f. Cordage, thread, etc.
   g. Cotton cloth. Mercerized Cotton Cloth.
   h. Hemp Fiber and Cloth.
   i. Linen Cloth. Linen tester.

2. Animal Fiber.
   a. Human hair.
   b. Hair of other animals. Wool. Bristle.
   c. Woolen cloth.
   d. Camel's hair. Alpaca. Mohair.
   e. Silk fiber. Silk cloth.
3. Mixed Fiber. Animal and Vegetable.
   a. Government Note. Bank Note.
   b. Felt Paper.
   c. Shoddy.
   d. Mixed cloth (wool and cotton).
4. Inorganic Fiber.
   a. Glass fiber. Glass wool.
   b. Asbestos.

II. Commercial Starches.
1. Corn starch, rice starch, wheat starch.
2. Potato starch, sweet potato starch, banana starch.
3. Arrowroot starches, etc.

III. Dextrins. A comparative study is to be made in order to determine the source of the starch used, the degree and character of dextrinization, etc.

IV. Starch Fillers. A study of starch fillers used in sausage meats.

V. Ice Cream Fillers. Starch, Tragacanth, etc.

VI. Flours and Meals.
1. Cereal Flours. A critical comparative study of wheat, rye, rice and barley grains and the flours made therefrom. Hand gluten test. Bamihl gluten test and Winton modification of the Bamihl test. Processed flour. Bleached flour and chemical test for bleached flour. Polished rice.
2. Oat Meal and Corn Meal. A comparative study. Note the distinct polarizing bands of corn starch.
3. Buckwheat flour. Italian Buckeye meal.
4. Pancake flours. Mixed flours. Making estimates of the percentages of the different flours in the compound or mixture.
5. Banana Flour. Squash meal, etc.

VII. Comparative Study of Brans—wheat, rye, rice, barley, corn. Middlings.

VIII. Cotton Seed Cake. Linseed Cake. A comparative study.

IX. Prepared Starches, Flours and Meals.
1. Spaghetti, macaroni, noodles.
2. Sago, etc.

X. Bread and Pastry. Examined as to the identity of materials used, as to kind of flour used, etc.
1. Breads, biscuits, rolls, etc. Examination as to starch identification, use of mixed flours, absence or presence of yeast cells, etc.
2. Cookies, cakes, "Arrowroot biscuit," etc.

XI. Breakfast Foods. These are to be examined as to material used, ascertaining manner of manufacture and absence or presence of substances declared on the label.
1. Flaked corn and wheat.
2. Rolled oats and wheat. Mixtures. Manner of manufacture. Chinese puffed rice.
3. Puffed rice and wheat.
4. "Cream of wheat," "Carnation mush," etc.
5. Shredded wheat, "Grape nuts," etc.

XII. Baby and Invalid Foods. These are examined as to presence of flours, unaltered starch, as to identity of starch, use of cane or milk sugar, presence of dried milk, casein, etc.

1. Dried milk and casein. Pure and mixed.
2. Starchy baby foods.
3. Horlick's malted milk.
4. Borden's condensed milk. Evaporated milk.
5. Eskay's food.
6. Peptogenic milk powder, etc.

XIII. Spices and Condiments. These are examined as to identity and quality (organoleptic testing) and as to absence or presence of adulterants. Samples are secured in the open market, from grocers and from pharmacists.

1. Capsicums—Hungarian, American, Mexican, etc.
2. Pepper—Black and white. Processed white pepper (bleached).
3. Allspice and allspice stems.
4. Cloves and clove stems. Exhausted cloves.
5. Nutmeg. Mace. Cinnamon.
6. Mustard. Prepared mustards.
7. Herb Condiments—Marjoram, sage, etc.
8. Umbelliferous spices. Curry powders.

XIV. Dairying Products.

1. Milk. A critical comparative study of normal cow's milk, pasteurized milk, boiled milk, evaporated milk and condensed milk, including bacterial content, presence of pus and blood corpuscles, sediment, etc.
2. Sour milk, klabbered milk, buttermilk.
3. Cream. Whole milk. Half milk. Skimmed milk.
4. Butter and butter substitutes.
5. Cheese and cheese parasites.

XV. Home Drinks.

1. Coffee. The normal and roasted bean. Ground coffee. Coffee substitutes. Dekofa. Cereal coffee. A careful study of round coffees and their more common admixtures and adulterants. A study of coffee substitutes as to composition.
2. Teas. Qualities and grades. Government standards and tests. Tea culture in the United States.
   a. Coloring substances. Reed test. West test.
   b. Adulterants. Exhausted tea. Japanese false tea. Foreign leaf, etc.
   c. Tea substitutes.
3. Cocas and Chocolates.
   a. Cocoas and Chocolates. Methods of manufacture.
   b. Cocoa shells.
   c. "Soluble cocoas."
   d. Cocoa butter.
   e. Adulterants.

XVI. Food Products, Vegetable and Animal. Samples are secured from private homes, grocers and canneries. They are examined as to identity, quality and purity and the findings recorded on special report cards. In the examination of these products the polarizer, the micrometer scale, the Thoma-zeiss hemacytometer (Turck ruling) and other necessary apparatus, are used. The Lagerheim sublimation tests for benzoic acid and salicylic acid and the curcuma thread test for boric acid and the starch paper test for sulphurous acid, are used.

1. Canned meats. Canned fish. Anchovy pastes, etc. Examine for mold and bacterial contamination and the presence of preservatives.
2. Sausage meats. Examine for starches and starch fillers, preservatives and coloring substances.

3. Jams and jellies. Examine as to identity, use of green fruit, fruit refuse, preservatives, yeast, bacteria and mold.
4. Catsups and tomato pastes. Examine for preservatives, mold, bacteria and yeast cells, tomato refuse, etc.
5. Preserved and Pickled Fruits. Examine for bacterial and yeast contamination ("Swells" and "Leaks"), for sulphurous acid (bleached fruits), and preservatives.

XVII. Candies. Qualities and grades. These are to be examined for various fillers (starch, flour), nature of coating, coloring substances, impurities, etc.

1. Stick candies. Nut candies.
2. Coated candies. Chocolate candies.
3. Gum drops, cough drops, caramels.
4. Licorice sticks, etc.

XVIII. Vegetable Drugs, Crude and Powdered. Compound Powders, Pills, Tablets, Extracts. Samples are donated by retail and wholesale druggists or purchased in the open market. These are examined as to quality and purity, ash content (including acid insoluble ash), fineness of powder, organoleptic characters, etc., and the findings entered upon special report sheets.

1. Powdered Vegetable Drugs.
2. Compound Powders. Dusting Powders. Face Powders.
3. Cattle powders.
4. Poultry powders.
5. Extracts, solid and fluid.
6. Medicinal Teas.
7. Pills.
8. Tablets.
9. Crude drugs. Pressed herbs.
10. Patent and proprietary preparations of an organic nature.
11. Calomel, Charcoal, Mercury, Sulphur.
12. Pastes, Plasters, Ointments.
13. Snuffs, Tobaccos.
14. Unknowns.

The sequence of the several operations of the complete analysis of a sample of powdered vegetable drug may be given as follows:

1. Noting the condition of the seals of the sample or package. Breaking the seals.
2. Thoroughly mixing the sample. Selecting an average sample.
3. Organoleptic testing (consistency or feel, color, odor, taste).
4. Determining the fineness by means of a suitable nest of sieves.
5. Preliminary examination of the average sample and of the samples upon the different sieves, using pocket lens, tweezers, etc. Organoleptic testing of individual fragments, etc.
6. Special examination (macroscopical and microscopical) of the several portions on the different sieves if thought desirable or necessary.
7. Again mixing the several portions on the several sieves and reducing to uniform fineness, if thought desirable or necessary.
8. Complete and thorough microscopical examination.
9. Ash determination if thought desirable.
10. Acid insoluble ash determination if thought desirable.
11. Special tests if thought desirable.
12. Recording the results of the analysis.

(To be continued.)

Obituary

ALBERT PLAUT.

On June 17, 1915, the remarkable life of this brilliant and highly esteemed member of the drug trade was closed by death.

Coming to the United States with his parents in 1868, when eleven years of age, he

ALBERT PLAUT

was prepared for his life's work by what in these days of long courses of study, would be considered a very inadequate education, viz., a three years' course in a New York public school and one year in the college of the city of New York. He also studied for one term at the New York College of Pharmacy. Mr. Plaut's natural abilities, however, were such that he assimilated knowledge rapidly and whatever he learned, he learned thoroughly, so that with this preliminary education he was able to conduct his large business interests and his various activities in commercial, educational and philanthropic work with the ease and refinement of one who had enjoyed a complete collegiate education.

In his fifteenth year he entered the drug business with his father, who was conducting a small jobbing drug business in New York City, and remained with him for five years, but when twenty years of age he found the

opportunity of his life by obtaining a position with Lehn & Fink, who had entered the importing and jobbing drug business three years previously, the firm combining the thorough training of the educated German apothecary in the person of Mr. Lehn, with the knowledge of the wholesale merchandising of drugs obtained by Mr. Fink while in the employ of some of New York's jobbing drug houses.

Albert Plaut rapidly assimilated knowledge from his new employers and applied his natural abilities and enthusiasm for work to their service to such good effect that upon Mr. Lehn's retirement in 1886 he became a member of the firm and twelve years later his brother, Joseph Plaut, who had entered the employ of the firm as credit manager in 1886, succeeded Mr. Fink, the remaining original partner.

During these and the succeeding years Albert Plaut's remarkable aptitude as a drug merchant became highly developed; he largely increased his firm's operations in the importation of drugs and chemicals, bringing in not only articles of large demand, but also new and rare grade remedies, so that, while catering to the requirements of manufacturers and large buyers, he steadily increased his firm's distribution to dispensing pharmacists and the best retail drug trade in all parts of the United States to whom Lehn & Fink became known as a source from which practically all articles in the drug and chemical line, however rare, could be obtained; while in Europe the house of Lehn & Fink was considered one of the most progressive drug firms of the United States.

While Mr. Plaut worked arduously in building-up the wholesale drug business which he brought into such prominence, he found time in his busy life to interest himself in many societies for trade-betterment, educational, social and philanthropic purposes. At meetings of these associations, his geniality made him many friends, while his intimate knowledge of business and readiness in debate always secured for him an interested audience.

In the drug trade he was a member of the National Wholesale Druggists' Association, serving it as chairman of many important committees, his services being recognized in 1912 by his being elected to the highest office in the gift of the Association, its presidency, and he directed the affairs of the Association in this capacity in 1912-1913.

He assisted in forming the Drug Section of the New York Board of Trade and Transportation, in which he always took an active interest; was chairman of the Section in 1903 and a director of the General Board for more than fifteen years.

He was a member of the New York Chamber of Commerce, in which he was the official arbitrator for the drug trade, and was recently elected vice-president of the Merchants' Association of New York.

He became a member of the College of Pharmacy of the City of New York in 1887, served as trustee and chairman of its important Committee on Instruction for nine years; was elected vice-president in 1913, serving as such at the time of his decease.

He was a member of the Committee of Revision of the United States Pharmacopœia, being elected on account of his intimate knowledge of imported drugs and their sources of supply.

He joined the American Pharmaceutical Association in 1894 and the esteem in which he held it will be best shown by quoting his reply to the greetings of the delegates from the Association to the meeting of the National Wholesale Druggists' Association at Dallas (1910) when he spoke as follows:

"The delegates of the American Pharmaceutical Association are always welcome at the meetings of the National Wholesale Druggists' Association, for many reasons: first and chief among these, I place the matter so thoroughly dwelt upon by the president of the American Pharmaceutical Association, viz.: the fact that they uphold the ethics of the profession at whatever cost. We realize that the American Pharmaceutical Association is responsible, more than any other factor, for the high standing which the pharmaceutical profession enjoys in our country today. As Mr. Eberle has stated, many of the members of our Association are members of that Association, but I take this opportunity to urge those who are not members of the American Pharmaceutical Association to join it, and I urge those of our retail friends who have not as yet seen fit to join that Association to become members of it. Anyone who sees the monthly publication issued by the American Pharmaceutical Association must be impressed, cannot help but be im-

pressed, by the good work, the high quality of the work, that is being performed by the Association. It was never more evident to me than at the recent Decennial Congress at Washington, held for the purpose of revising the Pharmacopœia. The representatives sent there by the American Pharmaceutical Association simply swept everything before them. The men whom they selected to do the work of revision are a body of men whom it is impossible to duplicate or equal among all the professions which are interested in the making of a new Pharmacopœia. I was never so deeply impressed before by the high moral tone, the scientific requirements, the technical knowledge brought out in the discussions at Washington, and the subsequent work of the Committee itself has only served to deepen that impression.

My remarks are really an eulogy of the American Pharmaceutical Association and the high standing which the Association enjoys among similar organizations in other lines. In continental Europe, in Germany, in France, in Austria, in Italy, the American Pharmaceutical Association is known, its prominent members are known, its high standing is recognized, and every American who visits foreign pharmacists and foreign laboratories will be surprised to know that frequently these gentlemen are better known in foreign countries than they are among ourselves, and all I can say, in conclusion, is to repeat my invitation that all those who are entitled to do so should join the American Pharmaceutical Association and get those of our employes and customers who are entitled to join, to do likewise."

Mr. Plaut was one of the founders and Vice-President of the Metropolitan Drug Club of New York, was one of the foremost members of the Chemists' Club and chiefly instrumental in obtaining the funds for the construction of its club house. Was an active member of the American Chemical Society and the Society of Chemical Industry. He was also a member of the Drug and Chemical Club, the City Athletic, Freundschaft, Liederkranz, Reform, Harmonie, Lotos, and Automobile Clubs, a number of which he served as officer or trustee.

He was also a member of and generous contributor to the Associated Hebrew Charities, and many other charitable and philanthropic organizations.

Mr. Plaut's generous character was shown by his numerous bequests, among which was $50,000 to employes who had been with him over ten years, $54,000 to educational institutions, hospitals and charitable societies, and $15,000 to the College of Pharmacy of the City of New York to endow a scholarship in memory of his father, to be known as the Isaac Plaut Fund.

Mr. Plaut lost his wife fifteen years ago and is survived by a son Edward and two daughters, Mrs. M. J. Falk and Miss Constance Plaut, who, in mourning their great loss, will be consoled by the knowledge that their lamented father died as he had lived, a citizen of no mean city, a man whose unique, forceful personality and splendid business abilities were known and recognized not only by the drug trade, but also by the leading members of the mercantile community, and who crowded into an all too-short life an amount of active work for the service of his fellows that few men are capable of rendering.

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ALBERT PLAUT.

A TRIBUTE BY W. C. ALPERS, SC. D.

The saying: "De mortuis nil nisi bene" is often put at the head of obituaries of prominent men in order to explain or excuse the then following eulogy. But it is not always necessary to begin notices of this kind with this phrase. In fact, there are cases where this expression becomes a statement of facts, where nothing but good and honorable can be said about the life and works of a departed friend, even if envy or prejudice should look for disapproving words.

Such a man was Albert Plaut. *Our* Albert Plaut, the whole pharmaceutical profession may say. For he was one of the most important, active, influential and honored men of our vocation. Not that he passed through life without enemies or defilers. Far from it. A man of strength, influence and decided character must, of necessity, have enemies. Perhaps it would bespeak less of his strength if he had none. The inscription on a tombstone, "He had no enemies," often appeared to us as a doubtful praise. The weak always fears the strong, the indolent criticises the thinker, the lazy hates the active, the slow envies the successful, the narrow-minded shuns the broad-minded, the miser detests the liberal.

Albert Plaut, too, had such enemies. But far from injuring him, they only added to the high esteem in which the better, the thoughtful, the co-laborers in his many-sided works held him.

But it was not these enemies, it was his friends that mourned at his bier, and he had many of them. Many more than the superficial observer believes. Friends of his successful activity, friends of his sharp and correct judgment, friends of his integrity and honesty, friends of his benevolence, friends of his sincere interest in all matters pharmaceutical, friends of his sacrificing heart.

There are two ways to recognize and judge men of importance. From a distance we may observe them, or in the close intimate circle of friendship. In our ordinary daily life all good men are more or less equal. Each one goes willingly to his work, performs the expected task, earns his bread by the sweat of his brow and goes home contented and hopeful. But when serious times approach, when the weight of events demands stronger shoulders, when the call for talent is heralded through the land, it is then that a giant suddenly towers above the masses. Without wishing or knowing it, the destined one is elected leader, or he breaks through to the front obeying his convictions. More than once when powerful commercial crises threatened did Albert Plaut take the lead. With a sharp look into the future he combined the correctness of quick logical thought. Therefore his advice was sought for and respected. Therefore he occupied the highest and most responsible positions in the societies of his calling. He was a power for action, a force for good. Thus he appeared from a distance, a giant in enterprise, in mind, in influence.

But whoever knew him more intimately, who had the privilege of casting a glance into his heart, would respect him still higher, and the esteem would grow to admiration, to intimate friendship. The world may justly praise Albert Plaut as an active, careful, prudent business man to whom rich compensation flowed as a just recognition of his abilities. But only few know that the acquisition of wealth was not the object of his life. He soared for higher aims. To him money was only the means to do larger and better things. The long list of benevolent societies, more than thirty in number, to which he left legacies, gives testimony of his benevolent mind and liberal hand. And yet, this is the smallest part of the blessing that he spread among his friends. His sacrificing heart acted without ostentation or flourish of trumpets, and he was always ready to assist the needy or suffering friend. The friend! for he examined carefully the hearts of those that approached him and understood well to distinguish flattery from truth. But whomsoever he had selected as his friend, to him he stuck, defended him against all attacks and helped him willingly and liberally.

For the higher interests of pharmacy Albert Plaut had a warm heart. His participation in the development of the College of Pharmacy of New York is well known and even beyond his death he extended this interest, as the legacy of $15,000 shows. In the circles of professional pharmacy his merits were equally recognized. When at the meeting of the Convention for the Revision of the Pharmacopœia in Washington in 1910 the election of a practical business man became desirable, on account of new laws passed by Congress, all eyes turned to Albert Plaut. He was elected a member of the Committee of Revision unanimously by men who had come from all parts of the United States and were convinced of his ability and reliability.

American pharmacy, in all its branches, commercial, scientific, educational and practical, loses in Albert Plaut one of its best and most devoted members and it will be hard to fill his place. As energetic business man, as sterling man of honor, as liberal benefactor, as advocate of higher pharmaceutical education, as dear, sacrificing friend we will remember him forever.

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Any business, in order to be a permanent success, must have as a guide the ideals which stand for honesty and integrity of the highest order, which is simply right thinking put into acts. Given a man whose every associate, or every employe, knows that he stands for integrity of the highest order and nothing less, and let the actions of that man speak more loudly than any words which he may say, and there you have a nucleus of a successful business; and let us not forget that while falsehood and insincerity may have a very hard crust, truth will, in time, find a weak spot and finally break through.—The Caxton.

Editorial Notes and Announcements

E. G. EBERLE, Editor.....Columbus, Ohio

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

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Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co., Columbus, Ohio.

PAPERS FOR THE ISSUES OF AUGUST AND SEPTEMBER.

As the papers that were read at the Detroit meeting of the American Pharmaceutical Association have nearly all been printed, the editor requests that contributions for the succeeding numbers of the Journal be submitted. It is not desired to interfere with the work of the Sections and doubtless papers read at the Branch meetings will contribute largely to our present needs.

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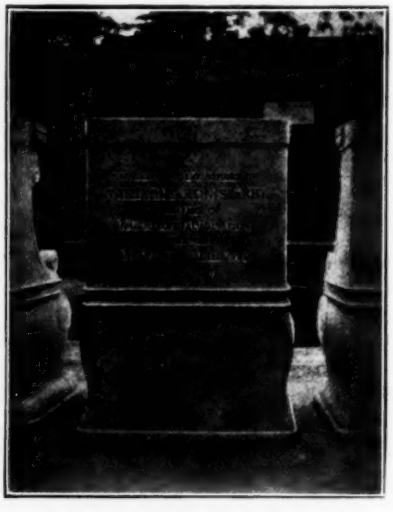
WILLIAM MARTIN SEARBY MEMORIAL.

The Alumni Society of the California College of Pharmacy paid a deserved tribute to the memory of William Martin Searby by presenting to the University of California a marble chair bearing the inscription:

"Dedicated to the memory of
William Martin Searby,
the Father of
Pharmaceutical Education
in the West.
Born 1835. Died 1909."

The ceremonies took place in the Greek Theater of the University at Berkeley, May 16, 1915.

Mr. Searby was elected President of the



Searby Memorial Chair

American Pharmaceutical Association in 1907, presiding at the meeting in Hot Springs (1908). The closing words of his address bear repetition:

"I ask you to turn your faces to the rising sun; feast your eyes on visions of a brighter

day, towards which we are all working as we seek to promote true pharmacy by education, by legislation and by steady, persistent efforts to develop a scientific, practical and ethical pharmacy."

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TABLET TO THE MEMORY OF DR. DAVID WALDIE.

A bronze portrait medallion tablet has been placed upon the wall of the building occupied by Dr. David Waldie in Linlithgow, England. The sculptor was H. R. Hope-Pinker, Master of the Art Workers' Guild. The tablet bears the following legend:

"DAVID WALDIE.
Surgeon, L. R. C. S. E. and Chemist,
Member of the Asiatic Soc. of Bengal.
B. Linlithgow, 1813. D. Calcutta, 1889.
A Pioneer in Anæsthetic Research.
To him belongs the distinction
Of having been the first to
Recommend and Make Practicable
The Use of Chloroform in the
Alleviation of Human Suffering."

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SOCIETIES AND COLLEGES.

Whenever reports of annual meetings are sent to the editor by the secretaries of the various Associations a brief account is given in these columns in an effort to present the more important events and transactions. The same may be said regarding reports from schools of pharmacy. Space prohibits going into greater detail, but whenever the list of graduates have been sent in, these have been published.

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DR. H. H. RUSBY ARRANGES INTERESTING TOUR TO SAN FRANCISCO.

A Pacific Coast tour of exceptional interest and value has been organized by Dr. H. H. Rusby. The going route is by way of the Canadian Rockies and the return via the Grand Canon. Stops will be made at Niagara, Toronto, Lake-in-the-Woods, where two days will be spent in fishing and touring in motor boats among the islands and along the streams, at Banff, Field and Glacier, in the Selkirks, where special attention will be paid to the alpine flowers among the glaciers, and where long stage rides will be taken among the mountains, at Vancouver, Victoria, Seattle and Portland. Six days will be spent in San Francisco, (Association week), one of which will be devoted to the ascent of Mt. Tamalpais and a visit to the big trees, and on one of which Dr. Burbank will conduct the party to his experimental plantations at Hayward. The next stop is at Los Angeles, whence the party goes to the San Diego Fair. Two days later the party returns to Los Angeles and goes to Long Beach, where the evening will be spent on the beach and among the phosphorescent waves. The following two days will be spent on Santa Catalina in fishing, sailing among the marine gardens and in a stage journey to the summit of the mountains. Returning to Los Angeles the party will leave by the Atchison road for the Grand Canon, spending two days at El Tovar Hotel, and then going to Flagstaff. At the latter place, visits will be made to the Lowell Observatory, where the members are promised a look through the great telescope, and to the caves of the ancient cliff dwellers. Two days will be spent at the petrified forests, whence the party will leave for home. From Las Vegas, some will return via Denver, some by St. Louis and some by Chicago. The journey occupies thirty-seven days, about twelve of which will be spent in transit and the rest at first-class hotels. The total cost, including all the side trips and recreations, and with the exception of meals taken a la carte in the dining car, is three hundred and fifty dollars.

The peculiarly interesting features of the trip lie in the fact that Dr. Rusby explored much of the region to be visited, in the interests of the Smithsonian Institution, before the advent of a railroad and while the country was still really primitive. He has pursued routes into the Grand Canon which are quite unknown to the ordinary traveler and is familiar with the forests and flora. While journeying in the Pullman, he will give many familiar talks on subjects of interest in connection with the places through which the car is passing, discussing such topics as

forestry, irrigation, glaciers, alpine floras, the methods and results of Dr. Burbank's work, the big trees, the origin of the Grand Canon, the perification of forests, methods of exploration and of travel under unusual conditions, etc.

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BULLETIN OF WISCONSIN PHARMACEUTICAL EXPERIMENT STATION.

We have received the Report of the Wisconsin Pharmaceutical Experiment Station. This brief comment is intended to express the satisfaction every pharmacist must have in progressive pharmacy.

The industrial pendulum swings to and fro more rapidly in this country than any other. We recognize opportunities and make use of them speedily, so that often permanent application is impossible because of extreme views. We accept of new discoveries and just as readily discard them. Some insist on the exclusion of nearly all drugs, while others are as emphatic for their retention, in each instance, often with more or less prejudice. Thorough research relative to the production, constitution and action of drugs should decide the question. On this basis the Materia Medica should be restricted, for undoubtedly thorough knowledge of a lesser number will enable the practitioner to be of a greater service. As long as there are thousands of remedial agents employed, so long will the practice of medicine slowly advance and we may expect continued refutation of the efficacy of medicine.

There are other things that hinder the progress of pharmacy, but research work in whatever direction should be encouraged, so we are interested in the report; the establishment of this Pharmaceutical Experiment Station should be exemplary to other states.

Scientific cultivation of drug plants has had the attention of the government and pharmaceutical houses and now if all states will recognize that public welfare is concerned in such experimental work we may hope to develop standardized drugs.

Agricultural Experiment Stations are established in every state and this work is so closely related that the admitted utility of the former at once offers an argument for the promotion of this endeavor, which though not directly of the same commercial importance, has a value seldom calculated in money.

Incidentally, it may be said that the report evidences the sincere purpose of thorough, practical investigation and experimentation, so that results may be utilized industrially. The Bulletin enumerates Wisconsin medicinal plants, contains an interesting article on the cultivation and distillation of wormwood oil in Wisconsin, a chemical study of it by E. R. Miller and one by H. A. Langenhan on the alkaloidal content of stramonium, replete with references.

The Bulletin Board

SAN FRANCISCO MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

(August 9-14, 1915)

PROPOSED CHANGE IN THE PROGRAM.

Remember that the Bellevue Hotel, corner Geary and Taylor Streets, San Francisco, is the official headquarters of the A. Ph. A., as announced in the April issue of the Pacific Pharmacist. Make your reservations early and avoid delay on arriving. For the benefit of those who may have overlooked the announcement referred to we repeat it in this issue. The following is the tentative program of meetings and sessions. It has been decided that the National Association of Boards of Pharmacy and the American Conference of Pharmaceutical Faculties shall hold their sessions on August 5, 6 and 7, of the week before the meeting of the A. Ph. A. The California College of Pharmacy will entertain the members of the Conference and the sessions of this body will be held at the College Building. The Board of Directors of the College are planning a lunch at the Golden Gate Park Casino, a visit to the Park Museum, a visit to the Museum of Anthropology of the University of California with a lecture by Dr. Kroeber of the department of anthropology of the university. The conference will hold one session on the forenoon of Friday, August 6th, and a second session at 7 p. m. of the same day. If necessary, a third session can be held on Saturday, August 7th.

The National Association of Boards of Pharmacy will hold its sessions on Friday and Saturday, August 6 and 7, and the joint session of the boards, the conference and the section of education and legislation will probably be held on Saturday, August 7th. Mem-

bers of the Association of Boards and of the Conference should take notice of the proposed change and make their headquarter reservations accordingly.

PROGRAM.

(Outline)

For the joint meetings of The National Association of Boards of Pharmacy and The American Conference of Pharmaceutical Faculties to be held Saturday morning, August 7, 1915. (The Saturday preceding the A. Ph. A. convention.)

FIRST SESSION.

President T. A. Miller, presiding. W. A. Teeters and H. C. Christensen, secretaries. Report of the joint committee on time and place of meeting. Chairmen of the joint committees, H. C. Christensen and J. A. Koch. Report of the joint committee on questions and examinations, W. S. Flint and Henry Kraemer. Relationship of local boards with local colleges, Philip Asher and Burton Cassaday.

SECOND SESSION.

President F. J. Wulling, presiding. H. C. Christensen and W. J. Teeters, secretaries. More perfect and beneficial relationship between the boards and the Faculties, R. H. Walker and C. W. Johnson. Prerequisite laws. Their benefits and objections. H. H. Rusby and John Culley. The relationship of the boards and the faculties to the American Pharmaceutical Association. President Mayo, President Miller and President Wulling.

Business referred to the joint session by the boards or the faculties.

If found necessary or advisable, sessions may be held Saturday night, August 7th, and Monday morning, August 9th.

Thursday, August 5th. (Sessions of the National Association of Boards of Pharmacy. The detailed program will be announced later.)

Friday, August 6th. 9:30 a. m. First session of the American Conference at the California College of Pharmacy. 12:30. Luncheon at the Golden Gate Park Casino. 2:00 p. m. Visit to the Park Museum. 3:30 p. m. Second session of the Conference. 7:30. Visit to the Museum of Anthropology and lecture. (The National Association of Boards of Pharmacy contemplates holding sessions on this day.)

Saturday, August 7th. 9:30 a. m. Joint session of the Boards of Pharmacy, the Conference and the Section on Education and Legislation. 2:30 p. m. The Conference may hold a third session. (The afternoon and evening may be devoted to a visit to the Exposition.)

The following is the tentative program of the sixty-third annual meeting of the American Pharamceutical Association for the week of August 9-14, 1915.

Monday—9:00 a. m. Meeting of the Council. 3:00 p. m. First, general session. 7:30 p.m. House of Delegates. 8:30 p. m. Meeting of committee on nominations. Meeting of committee on resolutions. 9:30 p. m. President's reception.

Tuesday—9:30 a. m. Second General Session. 2:00 p. m. Scientific Section. Women's Section. Joint Session of Commercial Section and Section on Education and Legislation. 7:30 p. m. Meeting of the Council. House of Delegates. Ladies' Theater Party.

Wednesday—9:30 a. m. Section on Education and Legislation. Commercial Section. 12:30 p. m. Luncheon of College Alumni. 2:00 p. m. Scientific Section. Section on Practical Pharmacy and Dispensing (Committee on Pharmacopœias and Formularies). 7:30 p. m. Meeting of Council. Ladies Reception.

Thursday—9:30 a. m. Commercial Section. Scientific Section. Practical Pharmacy and Dispensing (Committee on Pharmacopœias and Formularies). 11:00 a. m. Section on Education and Legislation. 2:00 p. m. Section on Education and Legislation. Historical Pharmacy. Women's Section. 7:30 p. m. Meeting of the Council (Reorganization). 8:00 p. m. House of Delegates. Ladies' Reception. Visit to Chinatown.

Friday—9:00 a. m. Meeting of the Council. 10:30 a. m. Final General Session. 1:30 p. m. Luncheon and Adjourned Final General Session at the Inside Inn, Exposition Grounds. 3:30 p. m. Go-as-you-please Exposition Visit. 6:00 p. m. Luncheon at the Inside Inn, Exposition Grounds. 7:30 p. m. Exposition Visit Continued—The Concessions and Illuminations.

Saturday—The Local Committee suggests that Saturday be given up to local visits and excursions, arranging the parties to suit. Some may desire to visit Mt. Tamalpais, others the Exposition and still others may desire to go to the Muir Woods, the University in Berkeley, Golden Gate Park.

WOMEN'S SECTION.

It is urged that every member of the Women's Section attend the meetings of their organization, which now is an official section of the American Pharmaceutical Association. They are also requested to invite others in attendance to join in making the San Francisco meeting a success. There will undoubtedly be quite a few present who never have had the pleasure of acquaintance with those who were active in the organization of this important and interesting section.

THE STOP IN DENVER.

The Denver branch of the Association reports the following program of entertainment for members en route to San Francisco on the A. Ph. A. special train, which will leave Chicago at 11 p. m., July 29.

Train will be met on arrival in Denver at 7:20 a. m., Saturday, July 31, and members escorted to Albany Hotel, where breakfast will be served and a few addresses made.

Party will then proceed by trolley to Golden, in the foothills of the Rockies; thence by automobile over a new and beautiful road to summit of Lookout Mountain, when a stop of several hours will be made and a box lunch served. Returning the party will reach Denver at 4:30 p. m., in time to do a little sight-seeing or shopping before the special train leaves for Colorado Springs at 7:45 p. m.

Advices from Salt Lake City report that a joint Committee of the Utah Pharmaceutical Association and Salt Lake Retail Druggists' Association has been appointed to arrange for the entertainment of visitors upon the arrival of the A. Ph. A. special train in their city, details of which will be announced later.

DIASTASE CLUB HEADQUARTERS AT SAN FRANCISCO, CAL.

The Beefsteak Room of the Hofbrau will be no mistake as the headquarters for the San Francisco meeting of the Diastase. The whole get up, from the barndoor to the barrel seats and the shingle-covered piano, are ideally Bohemian and the Peremptory Prerogative (Paregoric) will be announced by whosoever will be the presiding genius over this most unique aggregation.

P. S.—As past presiding officer (Detroit) while doing the P.-P. I. E. as one of the Perjurors—I took occasion to visit the trenches with Dr. Alb. Schneider. W. B.

PARTIAL PROGRAM

For the Joint and Separate Sessions of the Section on Education and Legislation.

Tuesday, Aug. 10th:

2:00 P. M.—Joint Session of the Commercial Section and Section on Education and Legislation.

1. Address of Edward H. Thiesing, Chairman of the Commercial Section.
2. Address of Frank H. Freericks, Chairman of the Section on Education and Legislation.

Reading of Papers.

"Desirable Legislation as an Aid to Maintain Pharmacy"—By Dr. James Hartley Beal.

"How Can the College of Pharmacy Best Help a Student to Secure an Appropriate Commercial Training"—By Dr. Wm. C. Anderson.

"Present method of Prescription Charges. How the joint consideration by Physicians and Pharmacists of a change in the method of prescription pricing can serve to produce a better understanding between them. The possibility of educational advantages. The best interests of the Patient. An aid to the Legitimate Retail Pharmacist"—By P. Henry Utech.

NOTE.

There will be three papers, one on each of the above subjects, read at the Joint Session under the auspices of the Commercial Section—Chairman Thiesing having about completed his arrangements to that end.

Wednesday, Aug. 11th:

9:30 A. M.—First Separate Session of the Section on Education and Legislation.

1. Report of Secretary R. A. Kuever.
2. Report of the Committee on Patents and and Trademarks—Dr. F. E. Stewart, Chairman.
3. Report of the Committee on National Legislation—Mr. John C. Wallace, Chairman.
4. Report of the Committee on Regulations for the Transportation of Drugs by Mail—Mr. Benjamin L. Murray, Chairman.

5. Report of Committee on Survey of the Pharmacal Teaching Institutions—Mr. Hugh Craig, Chairman.

Reading of Papers.

"Quizzes, Tests, or Final Examinations"—By Dr. H. V. Arny.

"Is the public welfare properly safeguarded by allowing the compounding and distribution of medicines to be made by those who prescribe them and who have not qualified as Pharmacists."—By Mr. Wilhelm Bodemann.

Report on a tentative draft for a Modern Pharmacy Law. This tentative draft is for consideration and discussion as the work of the Voluntary Conference for Drafting a Modern Pharmacy Law.

If necessary the consideration and discussion will be carried into the next Session.

Nomination of Officers.

Thursday, Aug. 12th:

11:00 A. M.—

1. Further Consideration of the Tentative Draft of a Modern Pharmacy Law.
2. Reading of Papers.

There are a number of interesting papers to be submitted for this Session for which the titles have not yet been definitely stated.

Thursday, Aug. 12th:

2.00 P. M.—Joint Session of the Section on Education and Legislation, Conference of Pharmaceutical Faculties, and National Association of Boards of Pharmacy.

Presidents F. J. Wulling, T. A. Miller, and Chairman Frank H. Freericks, presiding.

1. Report from the Conference of Pharmaceutical Faculties—By Prof. W. A. Teeters, Secretary.
2. Report from the National Association of Boards of Pharmacy—By Mr. H. C. Christensen, Secretary.

Papers of Joint Interest.

"Co-operation a Necessity. Why should there not be activity between the Medical and Pharmaceutical Professions in this direction?"—By Prof. Joseph P. Remington.

"Qualification Requirement for Teachers in Colleges of Pharmacy"—By Dr. William C. Alpers.

"Pharmaceutical Apprenticeship, Fifty Years Ago"—By Prof. John Uri Lloyd.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

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PHILADELPHIA.

The regular monthly meeting of the Philadelphia Branch of the American Pharmaceutical Association was held on Tuesday evening, May 11, at the Philadelphia College of Pharmacy. President S. C. Henry called the meeting to order at 8:30 p. m.

The minutes of the last meeting were read and approved. Under the head of new business, Dr. F. E. Stewart was nominated and re-elected as a member of the Council of the American Pharmaceutical Association from our Branch.

Mr. J. W. England presented "The Current Review of Pharmaceutical Literature," after which a "Permanent Home for the A. Ph. A" was discussed in an informal manner. The President appointed a committee of three to further investigate the matter.

J. ED. BREWER, Secretary.

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DETROIT.

The May meeting of the Detroit Branch of the American Pharmaceutical Association was held Friday evening, May 21, at the club rooms of the Wayne County Medical Society.

The report of the Treasurer was read and approved.

The Nominating Committee reported the following names for the various offices for the coming year:

For Member of the Council—W. A. Hall.
For President—W. L. Scoville.
For Vice-President—O. W. Gorenflo.
For Treasurer—C. F. Mann.

For Chairman Program Committee—H. B. Mason.

For Secretary—A. A. Wheeler.

The names as presented by the Committee were unanimously elected.

Mr. E. R. Jones then read an interesting paper on Greasy Cold Creams, dealing with the principles involved in making Cold Creams, and making a number of practical suggestions regarding the ingredients, perfumes, packages, etc., of these preparations.

The next paper was on prescriptions by Mr. A. A. Wheeler. Each prescription was written on a blackboard and a specimen of some of the finished products displayed.

A. A. WHEELER, Secretary.

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SAN FRANCISCO.

The San Francisco branch of the American Pharmaceutical Association held its regular monthly meeting on the evening of June the eighth, in the office of the Pacific Pharmacist. The meeting was called to order by Vice-president Jennie M. White.

The members unanimously approved of the election of Mr. J. H. Dawson as local secretary to succeed Dr. A. Schneider. The tentative program of the sixty-third annual meeting was discussed and seemed to meet with approval.

Mr. J. L. Lengfeld presented a paper on Tooth Powders and Tooth Pastes, in which he mentioned the various ingredients used in their manufacture, such as, chalk, both precipitated and prepared, magnesia, kieselguhr and kaolin. The importance of using materials of highest quality was emphasized.

The latter part of the evening was taken up with an informal discussion of the latest rulings of the Harrison Narcotic LAW. It was said that under treasury decision 2194 such drugs as novocaine, anaesthesin, orthoform and quinine and urea hydrochloride would be brought under the narcotic ruling.

There being no further business the members adjourned to meet again on the evening of July 13th, 8 o'clock, 723 Pacific Building. CLARISSA M. ROEHR, Secretary.

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NASHVILLE.

The regular meeting of the Nashville Branch A. Ph. A. was held on May 19th. President E. F. Troelinger presiding.

Dr. J. O. Burge presented the subject of How to Get New Members, and his plan of sending out a small folder as an insert was approved.

Dr. J. M. Rogoff stated that his experience as a teacher had convinced him that medical students should have better training in pharmacy and in the use of the United States Pharmacopœia. On motion, Dr. J. M. Rogoff and Dr. E. A. Ruddiman were appointed a committee to draft a resolution to be presented at the annual meeting in San Francisco advocating better pharmaceutical instruction in medical schools. A question box was decided upon as a feature of future meetings and the services of the students of the pharmacy and medical departments of Vanderbilt were promised in solving difficult problems.

Dr. J. M. Rogoff then read the second of a series of articles outlining a scientific sideline for pharmacists. This paper related to the quantitative examination of the gastric contents and explained how the total acidity, free hydrochloric acid, combined acid, and organic acid can be estimated by means of volumetric alkaline solution.

W. R. White then read a paper entitled, "The Chemistry of the United States Pharmacopœia."

W. R. WHITE, Secretary.

Colleges

UNIVERSITY OF ILLINOIS SCHOOL OF PHARMACY.

The University of Illinois School of Pharmacy has graduated from its longer course the following students with the degree of Pharmaceutical Chemist:

Carroll Edwin Bundy, Sheldon, Ill.
William N. Miller, Waterloo, Ia.
Joseph Pelc, Chicago, Ill.
Edward Palmer Scruggs, Livingston, Ala.

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THE COLLEGE OF PHARMACY OF THE STATE UNIVERSITY OF IOWA.

The commencement exercises of above named school were held June 16, Hon. John Barrett, Director General of the Pan American Union, delivered the address. Membership prize in the American Pharmaceutical Association by Dean Teeters, was awarded to E. R. Bergren, subscription to the Journal of the American Pharmaceutical Association, and donated by Professor R. A. Kuever, was awarded to W. A. Konantz; prize of mem-

bership in Iowa Pharmaceutical Association, by Professor Cooper to L. T. Dyke.

The list of graduates follows: E. R. Bergren, Essex; M. H. Anderson, Dike; M. Elsie Campbell, Clinton; Mollie M. Christiansen, Clinton; L. T. Dyke, Orange City; R. L. Fenlon, Iowa City; O. E. Ferguson, Dallas Center; B. B. Hunter, Montezuma; P. K. Huston, Allerton; Mandick Olsen, Forest City; H. W. Pierce, Volga City; R. F. Schneider, Wheatland; J. R. Prieto, Cruces, Cuba; A. B. Wagoner, Pittsville, Mo.; G. J. Zopf, Marengo; R. E. Neidig, Iowa City.

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JERSEY CITY COLLEGE OF PHARMACY.

The commencement exercises of the department of pharmacy of the College of Jersey City were held at the Bergen Lyceum June 8.

Dr. Gordon K. Dickinson delivered an address, the subject being, Professional Ethics. The degrees were conferred by Dean Dr. Joseph Koppel. President James E. Pope awarded the following prizes: Gold medal to Jacob Feinberg; silver medal to Lorentz Wold; silver cup for the best examination in organic chemistry to Raphael Taub, and the Alumni medal for the best work in pharmacognosy to Louis Schultz. The post-graduate prizes consisted of five memberships in the American Pharmaceutical Association as follows: Reuben Podolsky, Harry Breslaw, Abraham Rosenberg, Jacob Bankoff and Charles Muller. These prizes were awarded by Professor Otto Raubenheimer.

Names of graduates follow:

Senior students receiving the degree of Ph. G. (Graduate in Pharmacy): Herman Berkowitz, Jacob Feinberg, Louis Golden, Morris Goldstein, William Gordon, Lewis M. Horwitz, Jacob Jurow, Edward P. McCarthy, Joseph Novelle, Jacob Rosenbach, Samuel Rosenberg, Irving M. Rosenblum, Louis Schultz, Samuel A. Schwartz, Raphael Taub, Louis Winn, and Lorentz Wold.

Post-graduate students receiving the degree of Phar. D. (Doctor of Pharmacy): Jacob Bankoff, Reuben J. Botkin, Paul G. Bretschneider, Harry Breslaw, Ralph Buonome, Vincent Case, Frank S. DeLeo, Meyer Emanuel, Benjamin Foodim, Leo Genbarg, Alfred B. Guarnier, Henry Herschkowitz, Julius A. Klein, William C. Kraemer, Abraham Lipshitz, Abraham Moldover, Charles Muller, Samuel Neham, Herman H. North, Reuben Podolsky, Sol Pollok, Abraham Rosenberg, Samuel Schwartzman, Louis Sheinaus, Edward Sher, Isaac Simetz, James A. Sussman, Remo Trotta, Morris Tobias, and Hyman Vogel.

The annual banquet was held June 7. Many interesting but brief addresses were made. Edward Sher, president of the post-graduate class, presented the college with 260 volumes, purchased by the class from the estate of William Saunders. Professor Raubenheimer was presented with a gold watch. About one hundred participated in the banquet.

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DEPARTMENT OF PHARMACY OF THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.

The commencement exercises of the department of pharmacy of the Medico-Chirurgical College of Philadelphia were held at the Academy of Music June 4. The degrees were conferred by President David Milne, and the doctorate oration was delivered by Hon. C. R. Woodruff. The honorary degree of doctor of pharamcy was conferred upon Dr. Francis Edward Stewart, in recognition of high achievements and service. Other degrees were conferred as follows:

GRADUATES IN PHAMACY.

Maurice Lewis Augenblick, Harry Franklin Angstadt, Pennsylvania; Jacob Elmer Baker, Maryland; Harrison George Ball, Pennsylvania; Isaac Benjamin Bloomfield, Pennsylvainia; Harry Arthur Cohen, Pennsylvania; Earl Montgomery Cole, Pennsylvania; Rudolph Kissel Dorfman, Pennsylvania; Herman Maurice Feuerstein, Pennsylvania; Jean Leon Germann, Albert George Gibboney, Pennsylvainia; James Pursley Glover, Pennsylvainia; Samuel Sidney Goodman, Pennsylvania; Lewis Sigmund Greenburg, Pennsylvania; Albert Greenlees, Pennsylvania; John Milton Groff, Pennsylvania; Edward Israel Halin, Pennsylvania; Edward Joseph Heine, Pennsylvania; Paul F. Houser, Pennsylvania; Edward Huber, Pennsylvania; Edmund Griffith Jackson, Pennsylvania; Benjamin Ivor Jones, Pennsylvania; Morris Kabacoff, Pennsylvania; Joseph Francis Kennelly, Pennsylvania; Charles Jacob Koerber, Pennsylvania; Levy Meshkov, Pennsylvania; James E. Moss, Pennsylvania; Basil Justin Fontenoy Mott, Pennsylvania; Samuel B. Ostrum, Pennsylvania; Bernard Overbeck, Pennsylvania; Asterios Pappadopoulos, Greece; Thomas Henry Peters, Pennsylvania; Chester John Powell, Pennsylvania; Morgan

Charles Reed, Pennsylvania; Harry Russock, Pennsylvania; Howard Ely Seid, Pennsylvania; Herbert Allaman Smith, Pennsylvania; George Smithgall, Pennsylvania; Martin Yalen Smulyan, Pennsylvania; Alfred Bensinger Stellwagon, Pennsylvania; Michael Stoloff, Pennsylvania; Lester Charles Thrash, Pennsylvania; Aaron Vernick, Pennsylvania; John Robert Williams, Pennsylvania.

GRADUATES IN CHEMISTRY.

To receive the degree of pharmaceutic chemist, Ph. C.—Herman Louis Grupe, Ph. G., New York; John Loyd Hess, Ph. G., Pennsylvania; Herman Wischman Mathieu, B. S., Pennsylvania; John Francis O'Brien, Ph. G., New York; Henry Luffberry Somers, Ph. G., Pennsylvania.

To receive the degree of doctor of pharmacy, Phar. D.—Truman J. Wall, Ph. C., Pennsylvania.

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NEW YORK COLLEGE OF PHARMACY.

A library service bureau will be inaugurated by the New York College of Pharmacy July 1, and conducted under the supervision of Librarian H. V. Arny by Jeanot Hostman and Adelaide Rudolph. The service can be made use of by non-residents as well as local pharmacists. Inquiries of the latter may be taken up in person or by phone; the former will receive their information through the New York Journal of Pharmacy or by mail if a stamped, addressed envelope is enclosed. Problems requiring research will be handled for a moderate fee, also translations will be made into foreign languages.

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PHILADELPHIA COLLEGE OF PHARMACY.

The ninety-fourth annual commencement exercises of the Philadelphia College of Pharmacy were held June 10th, at the Academy of Music. The announcements were made by Dean Joseph Price Remington, and the degress were conferred by President Howard B. French. Colonel Henry C. Demming delivered the address.

The following were honored with the degree of Master in Pharmacy: William L. Cliffe, Philadelphia; Caswell A. Mayo, New York; William Mittelbach, Booneville, Mo.; Dr. H. M. Whelpley, St. Louis, and E. G. Eberle, Dallas, Texas.

The list of graduates follows:

Graduates in Pharmacy: Aaron Moses Abrahamson, Carlos Maria Aguiar, Ahmed Mahmound El Aguizy, Miss Silvia Clotilde Alacan, Clinton Fisk Avis, Harold Romayne Biddleman, Jay William Bright, Earl Raymond Briner, Bernice Berry Brown, Ph. G.; Miss Estella Elizabeth Brozeitis, Ph. G.; Edward Thomas Burton, Jr., Martin Francis Carmody, Earl Daniel Clark, Paul Close, Charles Mervin Conrow, Miss Catherine Elizabeth Costello, Parker Bare Creep, Ralph Bernard Deaver, Henry Bristol Decker, Lewis Hayden Eaton, Joseph Francis Elward, P. C.; Charles Brewin Everlockner, Miss Fanny Ferry, P. C.; Elmer Delmire Fox, Joseph Fox, Lewis Armstrong Fredericks, Ivan Ralph Fuss, Walter Emanuel Gable, Louis Gershenfeld, Raymond George Gibney, Leonard Edward Greenberg, Ralph Grube, William Frederick Haase, Jr., Charles Raymond Harer, Clarence Augustine Adams Henry, William John Heymann, Earle Milton Hite, James Henry Hodgkins, Miss Eleanor Grace Hoffman, John Henry Hoffman, Arnold Hoffman Huber, Joshua Israel, Charles Edwin Jackson, Elwyn Jones, James Watson Kephart, Frank Martin King, Dixon George Kitzmiller, Jr., Paul Edgar Klucher, William Charles Kohnle, William Sides Kobler, Charles Franklin Moyer, Edward Vincent Myer, Robert Lester Myers, William Edgar Nelson, Charles Adrian Pennock, Charles William Pepper, Earle Charles Phillips, Garland Blair Potterfield, Frank Jerome Reddon, Vaughn Rose Rupert, George Woodward Samsel, Bernard Samuels, Wesley Melvin Saylor, Lewis Cass Scheffey, Miss H. Edith M. Schofield, William Watts Schollenberger, Philip Siegel, P. C.; Harry Lauich Smith, James Samuel Soyles, Chester Arthur Spangler, Stephen Treverton Spargo, Henry Horace Stiles, Robert James Stewart, Harvey E. Stouer, Carroll Burrill Suminsby, William Randolph Tenney, John Thomas, Charles Isaac Tomlin, Samuel Aaron Trethewey, Harry David Wagner, Miss Esther Weinberg, Albert Maurice Weiner, Harry Randolph Whitmire, Joseph Livingston Wilder, David Boyer Witman, Gaile Edgar Wolfe.

Pharmaceutical Chemists—Walter Elmer Asher, Miller Hawk, Herbert Victor Jordan, Niles Amadus Knauss, Robert Allen Levy, Robert Franklin Ligan, Paul Marcus Pfeiffer Merner, Thomas Gilbert Miller, Mark Riggs, Gerald John Ruddy, Walter Raymond Scher, Charles Romey Silva, William Henry Snyder, Harold Edwin Werkheiser.

Certificate of Proficiency in Chemistry—Robert Truman Beardsley, John Brady Evans, Lloyd Philip Greisemer, Thomas Danforth Hughes, Paul S. Rodgers, Joseph Stein, Archibald Wolever.

Certificate in Bacteriology—Norman L. Force, Jacob Edison Good, Gilbert Leon Harvey, John Harry Hayes, Howard Jonathan Koch, Robert Franklin Ligan, Henry Lischer, George Lulie, Martin Lester Messinger, Lloyd Harry Patten, Leroy Ludwig Pennypacker, James Walter Shaffer, Guy Warren Showers, Harry Lanich Smith, Jay A. Smith, Elmer Milton Weidner, Harry Randolph Wiltmire, William Henry Woodring.

ANNIVERSARY REUNION.

Forty-five members of the class which graduated from the Philadelphia College of Pharmacy in 1885 met June 9 at the Hotel Adelphia.

The out-of-town members present were: W. B. Bissell, Syracuse, N. Y.; Dr. Charles J. Craythorn, Trenton; Dr. S. B. Crothers, Chester; Edward D. Cahoon, Fouthold, L. I.; O. B. Deakyne, New York; Dr. William D. Deuschle, Columbus, Ohio; P. S. Gehris, Brooklyn; George E. Hurd, Chicago; Dr. James Hunter, Jr., Westville, N. J.; H. E. Heinitsh, Spartansburg, S. C.; Dr. James O. Howells, Bridgeport, Ohio; Dr. Grant E. Kirk, Camden; Benjamin Rosenweig, Brooklyn; Joseph C. Roberts, Arlington, Md.; Dr. Walter Reynolds, Atlantic City; A. L. Serfass, Easton, Pa., and Henry S. Saunders, Toronto.

The Philadelphia members were: William C. Bichy, Robert C. Cadmus, George L. Carnan, J. A. Eberly, Arthur B. Hammond, Daniel H. Hassler, George A. Haffa, Harry E. Jones, Dr. E. Bryan Kyle, Alex. G. Keller, Dr. J. M. Malatesta, Robert B. Matter, Dr. John D. Moore, W. H. Morrette, J. L. Nedbinger, John W. Newton A. Curtis Schofield, George M. Smith, Thomas L. Schofield, Dr. S. L. Van Buskirk, and Dr. Alfred C. Wood.

The fifty-first anniversary reunion and dinner of the Philadelphia College of Pharmacy was held at Hotel Walton, with a large attendance. Dean Joseph P. Remington, of the college, was toastmaster. Addresses were made by George W. Samsel, of the graduating class; Caswell A. Mayo, representing the alumni association, and Dr. Alfred Heineberg.

Societies

EIGHTH ANNUAL MEETING OF AMERICAN ASSOCIATION OF PHARMACEUTICAL CHEMISTS.

The eighth annual meeting of the American Association of Pharmaceutical Chemists was held in Rochester, N. Y., May 31 to June 5.

President George C. Hall, of New York, reviewed the activities of the year in an able address. Among the important actions taken at the meeting was the establishment of a scientific section to consider and promote the scientific manufacture of pharmaceutical preparations, to define exactness and uniformity in tests and methods of analyses and to have these results recognized by federal and state officials. It is proposed to standardize formulas and eliminate as far as possible those that are useless and unscientific.

The suggestion was also made that so far as practical, narcotics be stricken from pharmaceutical compounds.

A valuable report was presented by the Board of Directors. They indicated their strong approval of the Federal narcotic law and the enactment of effective and uniform state laws modeled after this measure. They also approved the constructive work of the Chamber of Commerce of the United States, providing for uniformity in pure food and drug laws. They recommended the enactment of laws, providing for the proper sanitation and inspection of all places where drugs and medicinal preparations are manufactured, sold, dealt in or handled in any manner.

The Board of Directors presented a resolution by which the Association reaffirms its confidence in and approval of the purposes of the National Drug Trade Conference and continuance of co-operation. R. C. Stofer, W. T. Abbott, and George C. Hall were named delegates and the president was authorized to appoint alternates. Co-operation was offered the American Dairy, Food and Drug officials. They approved proper and effective safeguarding of the sales and manufacture of mercuric chloride tablets, but disapproved of the cylindrical tablet, colored pink and wrapped separately in paper.

B. L. Maltbie as chairman of the committee

on variation clause presented the following resolution:

Resolved, That the American Association of Pharmaceutical Chemists hereby record its earnest disapproval of the elimination of the variation provision of the Food and Drugs Act of June 30, 1906, and in several similar state laws, believing that such an amendment is contrary to public welfare.

Cedar Rapids, Ia., was selected for the next place of meeting. The following officers were elected: President, B. L. Maltbie, Maltbie Chemical Company, Newark, N. J.

First Vice-President, E. S. Holt, Howard-Holt Company, Cedar Rapids, Iowa.

Second Vice-President, J. W. Haynie, Columbus Pharmacal Company, Columbus, Ohio.

Secretary-treasurer, Dr. C. H. Searle, G. D. Searle Company, Chicago, Ill.

The Board of Directors, members elected for one year: H. A. Stiles, Stearns & White Company, Chicago, Ill.; H. C. Moore, Pitman-Moore Company, Indianapolis, Ind.; R. J. Strasenburgh, Rochester, N. Y.

Members elected for two years: R. C. Stofer, the Norwich Pharmacal Company, Norwich, N. Y.; F. L. H. Nason, Tailby-Nason Company, Boston, Mass.; G. C. Pratt, the National Drug Company, Philadelphia, Pa.

Members elected for three years: C. W. Abbot, M. D., the Abbot Alkaloidal Company, Chicago, Ill., chairman; G. C. Hall, the Zemner Company, Pittsburgh, Pa.; G. D. Ellyson, the Standard Chemical Company, Des Moines, Iowa.

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AMERICAN MEDICAL ASSOCIATION.

We are not in position for this issue to make extended reference to the annual meeting of the American Medical Association in session at San Francisco during the week of June 22. We abstract briefly from the address of President W. L. Rodman, his reference to the elimination of medicine frauds and secondary education leading to the medical profession.

Referring to the efforts which the association had made in the elimination of patent medicine frauds, Dr. Rodman said the fight had involved legal proceedings which the association was combating vigorously, but that it was interesting to note that concerns with new preparations for the market were coming to the association's experts for endorsement. The Council of Pharmacy and Chemistry now had in its laboratories three chemists who give their whole time to testing such medicine, and the work had culminated in the issue of the book entitled "Useful Drugs," which a number of the best schools now use as a textbook.

"It remains," he said, "for the profession to set its ban on all proprietary medicines, if the only information concerning them comes from those who manufacture and sell them."

A point on which Dr. Rodman laid great stress was secondary education leading to the medical profession. The reforms which the association had fought for in medical schools had been so far brought about that the standard required was now as high as it should be for all of the schools of the entire country.

"An irreducible minimum has been reached," he said, "and it should be honestly enforced—that is, as soon as it can be. There is, of course, no limit to the maximum that any highly endowed and exceptionally circumstanced institution may adopt for itself."

He said that the ranks of the medical schools had been so thinned that a third of the schools were now hors de combat and it was expedient to mark time for a while "and give those institutions which have approached the firing line at a double-quick speed a chance to catch their breath."

But the problem of secondary education for the medical man he thought was handicapped by too high a cultural standard. Although a course in biology, chemistry and physics was agreed upon as a prerequisite to the study of medicine, the subjects were not taught satisfactorily in the high schools and colleges generally.

"Therefore, for the present at least, it must be taught largely by the medical schools, or there must be, as has been suggested by distinguished educators, a rearrangement of the curricula of high schools, so that they will embrace a course in the science which will be acceptable to medical schools.

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NEBRASKA ASSOCIATION.

The thirty-fourth annual meeting of the Nebraska Association convened in Omaha June 8th to 10th. J. Leyden White, of Washington, addressed the Association, and F. W. Nitardy, of Denver, presented an excellent paper, which is printed in this issue of the Journal.

Chancellor Avery, of the University of Nebraska, delivered a brief address.

One evening of the convention was given over to a lecture by Dr. F. W. Millner, ex-

perimental engineer of the Union Pacific railroad. This was made most interesting by experiments with wireless telegraphy and telephoning from and to trains in motion.

The election of officers resulted as follows: K. L. Kreizinger, President; Vice-presidents in the order named: J. E. O'Brien, Omaha; W. E Clayton, Grand Island; J. C. Preston, Pierce; G. T. Haines, Omaha; J. C. Hoff, Wisner; O. D. Adams, Treasurer, Nehawka, and J. G. McBride, Secretary, University Place.

Hastings was selected as the next place of meeting.

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NORTH CAROLINA ASSOCIATION.

The thirty-sixth annual convention of the North Carolina Pharmaceutical Association met at Durham June 15-17. President G. C. Goodman advocated the Stevens bill, commended the Harrison law and outlined the activities of the Association. Thirty-six new members were added. A. L. Fishel was awarded the James H. Beal membership prize, having attained the highest average of the year before the North Carolina Board of Pharmacy.

An interesting program was carried out, enhanced by the following list of valuable papers and speaks for the successful work of Chairman E. L. Tarkenton:

Parcel Post and How I Made a Success of the Drug Business, by C. A. Raysor, Asheville. How Does the Laity Learn the Use of the Newer Synthetic Remedies and the Best Method of Getting the Physician to Prescribe N. F. Preparations, William H. Blauvelt, Asheville. Cultivation of Ginseng and Hydrastis, K. E. Bennett, Bryson City. Kodak and Kodak Supplies and News Stands for Drug Stores, Geo. Y. Watson, Southport. Commercial Pharmacy, C. P. Greyer, Morganton. State Pharmacy Laws, W. W. Horne, Fayetteville. Relation of the Physician and Pharmacist, Burney S. Warren, Greenville. How to Stimulate a Sick Drug Business, E. L. Tarkenton, Wilson. Is the Attendance at Most Pharmaceutical Meetings Due to Lack of Interest or Lack of Time? H. T. Hicks, Raleigh. The Retail Pharmacist and the Traveling Salesman, P. W. Vaughan, Durham. Why Some Pharmacists Don't Make More Money, Sam. E. Welfare, Winston. Deterioration of Pharmaceutical Preparations, Jno. L. Henderson, Chapel Hill. Advantage and Disadvantage of Buying in Large Quantities, C. C. Seawell, High Point. The Conflict Between Professional and Commercial Pharmacy, J. G. Beard, Chapel Hill. Reciprocity, H. W. Leyden, Burlington. Are We Preparing Satisfactory Clerks? J. F. Shell, Lenoir.

The election of officers resulted as follows: President, E. L. Tarkenton, Wilson; First Vice-President, E. G. Birdsong, Raleigh; Second Vice-President, G. A. Matton, High Point; Third Vice-President, S. E. Welfare, Winston-Salem; Secretary, J. G. Beard, Chapel Hill; Local Secretary, D. A. Elvington, Wilmington; Treasurer, G. E. Burwell, Charlotte; Executive Committee, C. J. O'H. Horne, Greenville; L. L. Haywood, Durham; P. A. Lee, Dunn; Jesse Carter, Aberdeen; J. G. Beard, ex-officio, Chapel Hill; Member of Board of Pharmacy, C. P. Greyer, Morganton.

The next meeting of the Association will be at Wrightsville on the coast, June 20-21-22, 1916.

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ILLINOIS PHARMACEUTICAL ASSOCIATION.

The Illinois Pharmaceutical Association held a successful meeting at Springfield June 15-17. Professor J. H. Beal delivered an address on "The Standardization of Pharmacy Legislation"; U. S. Senator Lawrence Y. Sherman spoke on "Pharmaceutical and Medical Legislation." Secretary Potts of the N. A. R. D. addressed the convention on the Stevens bill and Harrison law.

President W. F. Bunn in his annual address criticized "cut-rate" druggists and mail order houses handling drugs and spoke of legislation affecting druggists before the present legislature. Before the convention finally adjourned it was announced that the anti-narcotic bill (S. B. 300) had been passed and gone to the governor.

The association will for the next five years meet in Springfield, with the understanding that a pharmaceutical exhibit will be provided and it is also contemplated to canvass the state for new members. Dr. J. H. Beal donated one hundred dollars to the Association, the interest to be used to provide membership in the Association for three young men each year, who make the best average before the Illinois Board of Pharmacy.

The following were awarded prizes for papers: W. S. Denton, subject, "Should the Ownership of Drug Stores be Restricted to Registered Pharmacists"; G. E. Schwitzer, "How to Build Up Business by Courtesy" and "Business Getting" by F. B. Shaffer.

The Auditing Committee reported $1207.28 in the general fund and $600 in the permanent fund. Sixty new members were elected. The Association reaffiliated with the National Association of Retail Druggists. The names of T. D. Gregg, C. A. Stover, L. P. Larsen, C. F. Schultz, and H. C. Schuh were recommended to the governor, from which to select one new member of the Board of Pharmacy. E. A. Sell, F. H. Kroh and F. Mares were endorsed for the Advisory Board of the University.

The election of officers resulted as follows: President, Julius Riemenschneider, Chicago; First Vice-President, W. S. Denton, Beardstown; Second Vice-President, Byron Armstrong, Jacksonville; Third Vice-President, Robt. J. Phillips, Springfield; Secretary, W. B. Day, Chicago; Treasurer, Chris. Garver, Bloomington.

The thirty-seventh annual convention will be held at Springfield June 6, 7 and 8, 1916.

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TEXAS ASSOCIATION.

The thirty-sixth annual meeting of the Texas Pharmaceutical Association was held in Houston June 15th to 17th. While the attendance was not as large as anticipated, the meeting was a very enjoyable one and Houston did its part well as a host. Frank B. Dwyer welcomed the visiting druggists on behalf of the local Association, and Mrs. Clinton Murray in a eulogy praised the men who make the physicians' success possible. The city's welcome was extended by Commissioner H. A. Halverton. Dr. E. F. Cook spoke for the Medical Association, in which he complimented Dr. R. R. D. Cline, who represented the Texas Pharmaceutical Association at the State Medical Association.

President Walter D. Adams in a very comprehensive and valuable address reported the activities of the Association during the term of his office. He recommended that the House of Delegates of the American Pharmaceutical Association be composed of representatives of various state associations, and this recommendation was approved. He also advocated re-affiliation with the National Association of Retail Druggists and in this he also was upheld.

Among the visitors from outside of Texas was Hugh Craig, Editor of the Journal of the National Association of Retail Druggists. He discussed in a very able and brilliant manner the laws that had affected pharmacy during the past and at the present time. He spoke in favor of the Stevens bill and explained the good results that have resulted from the Harrison law. The Harrison law was also discussed by Deputy Collector Zinnecker. Dr. R. R. D. Cline spoke of the importance of standardizing drugs and preparations. W. H. Cousins, of the Southern Pharmaceutical Journal, spoke of the relation between retail druggists and the jobber.

The get-together spirit and co-operation was the subject of a number of addresses and papers.

R. H. Walker delivered the annual memorial address and paid a beautiful tribute to deceased members. Unfortunately it became his duty to speak of the death of Mrs. I. Lewyn, the wife of one of the Houston members, who died while the Association was in session at Houston.

The activity of the Women's Auxiliary was evidenced in the establishment of a scholarship in the Pharmacy Department of the State University in providing a scholarship for a worthy girl student each year.

The election of officers resulted as follows: A. M. Fischer, of San Antonio, President; C. E. Craycroft, of Sherman, First Vice-president; W. G. Wilman, of Brownsville, Second Vice-president; Mrs. E. B. Dwyer, of Houston, Third Vice-president; Tom J. Snell, of Cooper, Fourth Vice-president; W. H. Cousins, of Dallas, Secretary-treasurer; J. W. Graham, of Austin, Home Secretary; Miss Lum Shipe, of San Marcos, Historian.

Fort Worth was selected as next place of meeting and the time the third Tuesday in May.

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KENTUCKY ASSOCIATION.

The thirtyeighth annual meeting of the Kentucky Pharmaceutical Association was held June 15th to 17th at Dawson Springs. It was provided that the state should be thoroughly organized so that legislative measures may be strongly supported. The Stevens bill was re-endorsed and the members urged to support its passage in every way possible. Quite a number of valuable papers were read, and the following officers were elected for the ensuing year: President, W. H. Tibbals, Somerset; Secretary, J. W. Gayle, Frankfort; Treasurer, Vernon Driskell, Carrollton; Chairman Executive Committee, Leon Evans, Mayfield.

Selection of the next meeting place is left to the executive committee.

IOWA ASSOCIATION.

The Iowa Pharmaceutical Association met at Clear Lake. While the attendance was not as large as anticipated on account of inclement weather, there were upwards of 700 in attendance.

J. Leyden White and Charles Huhn participated in the meeting as representatives of the N. A. R. D. A resolution was passed advocating a constitutional commission of seven members in the N. A. R. D., who should not be elective or appointive office holders in that Association during their time of service on such commission. The development of the organization into one of state units forming the whole, was recommended as one of the points to be considered by the commission. The reorganization of the executive division along lines corresponding to that of the President and Cabinet of the United States.

The officers of the Association elected at the meeting are: J. R. Sutter, Burlington, President; Milo J. John, Clinton, First Vice-President; J. L. Etzel, Clear Lake, Second Vice-President; T. M. Watts, Holstein, Third Vice-President; J. M. Lindly, Winfield, Treasurer; Al. Falkenhainer, Algona, Secretary; A. C. Phillips, Manchester, Executive Committee member for three year term.

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MARYLAND ASSOCIATION.

The thirty-third annual convention of the Maryland Pharmaceutical Association was held at Braddock Heights.

President J. F. Leary, in his address, called the attention to a number of unnecessary laws relating to pharmacy and recommended opposition to every legislative bill hereafter that was not first indorsed by the State Association. Supervision over the dispensaries of physicians was recommended. The Stevens' bill was indorsed. Doctor A. R. L. Dohme spoke on the Harrison law. He asserted that the synthetic substitutes for cocaine were not habit-forming and should not come within the purport of the law. He contended that a distinction should be made between a hypnotic and a narcotic.

A resolution was offered that a pharmacist have place on the State Health Board.

Among the visitors at the convention were representatives from other state associations, Secretary Potts of the N. A. R. D. and Dr. Lyman F. Kebler. Charles H. Knight, J. Fuller Frames, and J. William Dorman, of Baltimore, were recommended to the Governor for appointment of one member on the State Board of Pharmacy.

The following officers were elected: President, G. A. Bunting, Baltimore; First Vice-President, Thomas M. Williamson, Frederick; Second Vice-President, Eugene W. Hodgson, Baltimore; Third Vice-President, Charles K. Stottlemeyer, Hancock; Secretary, E. F. Kelly, of the University of Maryland, Baltimore; Treasurer, Samuel Y. Harris, Baltimore.

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PENNSYLVANIA ASSOCIATION.

The Pennsylvania Pharmaceutical Association convened in the thirty-eighth annual convention at Forest Park, June 22d to 24th. A large number of interesting papers were presented, including a very comprehensive report on the drug market.

President E. F. Heffner recommended in his address the appointment of a Publicity Committee for disseminating correct information regarding pharmacy to the general public. Affiliation with N. A. R. D. was continued, and the Stevens' bill endorsed.

The newly elected officers are: President, Theodore Campbell, of Philadelphia; Vice-Presidents, Adolph Schmidt, of McKeesport, and Adam B. Heckerman, of Port Royal; Secretary, David J. Reese; Assistant Secretary, Lewis H. Davis; Treasurer, Francis H. E. Glein; Member of Executive Committee for three years, Crowell Keller, of Harrisburg.

The next meeting will be held at Reading, Pa., June 20th, 1916.

The Pharmacist and the Law

The health department of the city of New York has appointed inspectors to visit all large manufacturers and distributors of "patent" remedies, having in view the purpose of driving all such remedies as make false representations from the market, and also in order to induce the manufacturers to file their qualitative formulas for their medicines with the health department, although the local health board's formula disclosure ordinance does not become effective until December 31, 1915. To date none of the

manufacturers of proprietary medicines has complied with this ordinance.

Several manufacturers have been brought into court and it is stated that the cases will be defended.

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PENNSYLVANIA RECIPROCAL RECOGNITION OF PHARMACY GRADUATES BILL APPROVED.

Governor Brumbaugh, of Pennsylvania, has approved an amendment to Section 5 of the general pharmacy act of May 24, 1887, by providing that pharmacists' certificates shall be issued (after proper examination, etc.) only to graduates of colleges of pharmany "of this (Pennsylvania) or some other state or any foreign country whose pharmacy licensing board or other authority recognizes the graduates of the reputable and properly chartered colleges of pharmacy of Pennsylvania, and admits the graduates of all such colleges to its pharmacy licensure examinations."

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HARRISON LAW RULINGS.

Article I, second paragraph of the Harrison law has been amended as follows, and relates to registration by owners of more than one store, etc.

"If the applicant has more than one place of business, or if, in any case, the applicant is engaged in more than one profession or business where any of the drugs above described (in the law) are made, stored or dispensed, a separate application for registry must be made and a special tax must be paid in each such case."

A decision (T. D. 2214) provides that in order to legally register a party must be a legitimate producer, importer, manufacturer, seller, or distributor of the aforesaid drugs, and likewise a physician, dentist or veterinary surgeon can register under this act and dispense these drugs "in the course of his professional practice only." It also follows from the express language of the act that such physician, dentist or veterinary surgeon can prescribe such drugs when he "has been employed to prescribe for the particular patient receiving such drugs," and upon whom he "shall personally attend in the course of his professional practice only," and such prescriptions must be made "in the legitimate practice of his profession," and then only when "employed to prescribe for the particular person receiving such drugs."

This ruling will largely exclude the supplying of drugs on mail orders.

Another ruling provides that collectors of internal revenue will require persons making applications to state, under oath, in the blank space on Form 678, or if not sufficient space on the line for that purpose it should be in the form of an affidavit attached to the application or this form, that they will engage in administering, dispensing or prescribing narcotic drugs only in the legitimate practice of medicine, dentistry or veterinary surgery; or will engage in the business of producing, importing, manufacturing, compounding, dealing in, dispensing, selling or distributing, as the case may be, only those narcotic drugs for which they are duly qualified by law, e. g., "The undersigned is now engaged or on and after ———— will engage in the legitimate practice of medicine (dentistry or veterinary surgery), and is, or are, duly authorized by law to administer, dispense or prescribe narcotic drugs," or "The undersigned is now engaged or on and after ———— will engage in the lawful business of producing (importing, manufacturing, compounding, dealing in, dispensing, selling or distributing) narcotic drugs."

Council Business

COUNCIL LETTER No. 24.

Philadelphia, Pa., May 26, 1915.

To the Members of the Council:

Motions Nos. 37 (Award of Contract for Reporting 1915 Annual Meeting) and *38 (Election of Members; Applications Nos. 114 to 131, inclusive)*, have each received a majority of affirmative votes.

Motion No. 39 (Appropriation of $50 for A. Ph. A. Buttons and Pins). Moved by H. M. Whelpley, seconded by J. W. England, that an appropriation of fifty dollars be made for the purchase of official A. Ph. A. Buttons and Pins. The appropriation is approved by the Committee on Finance.

Motion No. 40 (Election of Members). You are requested to vote on the following applications for membership:

No. 132. Joseph Winfred Raycraft, 702 Jackson St., Springfield, Ill., rec. by Clyde M. Snow and W. B. Day. (Pharmacy Prize, University of Illinois, School of Pharmacy.)

No. 133. Samuel Leon Baker, 1554 W. 12th St., Chicago, Ill., rec. by W. B. Day and

Clyde M. Snow. (Materia Medica Prize, University of Illinois, School of Pharmacy.)

No. 134. Frank Eugene Lane, Jr., 4015 Blair Ave., St. Louis, Mo., rec. by Glenn A. Burkart and H. M. Whelpley.

No. 135. David J. Reese, 17th and Huntingdon Sts., Philadelphia, Pa., rec. by Charles H. LaWall and M. R. LaWall.

No. 136. Omer St. Amour, Box 1819, Ste. Agathe Des Monts, Quebec, rec. by Alex. J. B. Moore and Wm. B. Day.

No. 137. William G. Heddesheimer, 2482 8th Ave., New York, N. Y., rec. by Joseph Maisel and J. Leon Lascoff.

No. 138. Gustave H. Meyer, 2433 7th Ave., New York, N. Y., rec. by Joseph Maisel and J. Leon Lascoff.

No. 139. Jacob Marianowsky, 310 S. 4th St., Brooklyn, N. Y., rec. by J. Leon Lascoff and Gustave Horstmann.

No. 140. Oscar M. Godlust, 1566 3d Ave., New York, N. Y., rec. by J. Leon Lascoff and Thomas Latham.

No. 141. P. Gerhard Albrecht, Cleveland School of Pharmacy, Cleveland, O., rec. by Wm. C. Alpers and J. L. Stingel.

No. 142. George Gehring Marshall, Marshall Bldg., Cleveland, Ohio, rec. by Wm. C. Alpers and J. L. Stingel.

No. 143. Wm. P. Stevenson, 210 Spruce Ave., Rochester, N. Y., rec. by Eugene L. Maines and Howard W. Gardner.

No. 144. Hilton F. Snider, 195 Exchange St., Rochester, N. Y., rec. by Eugene L. Maines and Howard W. Gardner.

No. 145. John Harold Strasenburgh, 195 Exchange St., Rochester, N. Y., rec. by Eugene L. Maines and Howard W. Gardner.

No. 146. J. Larkin Fields, 110 E. Douglas St., Wichita, Kans., rec. by J. S. Chism and Wm. B. Day.

No. 147. George E. Canham, 6144 Kenwood Ave., Chicago, Ill., rec. by Wm. B. Day and Clyde M. Snow.

No. 148. Mike Robert Bianco, Du Quoin, Ill., rec. by Wm. B. Day and Clyde M. Snow. (Chemistry Prize, University of Illinois, School of Pharmacy.)

No. 149. Harry Deathe, 300 Link St., Palestine, Texas, rec. by J. Morgan Fletcher and E. G. Eberle.

No. 150. Mayne E. Parker, 1902 Bellefontaine St., Indianapolis, Ind., rec. by A. H. Dewey and W. F. Gidley.

No. 151. Miss Beatrice W. Fansler, 1015 South Washington St., Marion, Ind., rec. by A. H. Dewey and L. Atkinson.

No. 152. Arthur E. Denison, 815 Beech St., Terre Haute, Ind., rec. by A. H. Dewey and C. B. Jordan.

No. 153. E. Carl Mayfield, LaFayette, Ind., rec. by A. H. Dewey and C. B. Jordan.

No. 154. Merrit W. Tam, Warren, Ind., rec. by A. H. Dewey and D. B. Adams.

No. 155. Walter R. Shugers, Auburn, Ind., rec. by A. H. Dewey and W. F. Gidley.

No. 156. Miss Bessie Olive Cole, 3618 Sycamore St., Baltimore, Md., rec. by Chas. Caspari, Jr., and Henry P. Hynson.

No. 157. Annie M. Patterson, 631 Euclid Ave., Roland Park, Baltimore, Md., rec. by Chas. Caspari, Jr., and Henry P. Hynson.

No. 158. Charles Joseph Shulmyer, 291 California Ave., Providence, R. I., rec. by William O. Blanding and Albert W. Claflin.

No. 159. Beth Angeline Michel, Baylor College of Pharmacy, Dallas, Texas, rec. by Chester A. Duncan and E. G. Eberle.

No. 160. John Edward Tremble, 644 St. Catherine St., West, Montreal, Quebec, Canada, rec. by Alex. J. B. Moore and Wm. B. Day.

No. 161. Roy Thomas Cope, 314 Main St., Irwin, Pa., rec. by Charles H. LaWall and E. G. Eberle.

No. 162. Herman Leon Hinski, 2738 E. Allegheny Ave., Philadelphia, Pa., rec. by Charles H. LaWall and M. R. LaWall.

No. 163. Wilbur B. Goodyear, 1901 Derry St., Harrisburg, Pa., rec. by Charles H. LaWall and M. R. LaWall.

No. 164. Frank Louis Hunt, 47 West Main St., Norwich, N. Y., rec. by H. V. Arny and J. Hostmann.

No. 165. Victor Emanuel Levine, 437 W. 59th St., New York, N. Y., rec. by Otto Raubenheimer and Luke C. Hines.

No. 166. Joseph Jacobsohn, 3639 Third Ave., New York, N. Y., rec. by Dr. Adolph Shnitter and Otto Raubenheimer.

No. 167. David Costelo, 918 Sixth Ave., New York, N. Y., rec. by Thomas F. Main and Caswell A. Mayo.

No. 168. John J. Bockar, 139 Liberty St., New York, N. Y., rec. by C. A. Mayo and J. Hostmann.

No. 169. Clarence T. Wittkamp, Montgomery and Brewster Ave., Cincinnati, Ohio, rec. by Theo. D. Wetterstroem and Frank Cain.

No. 170. Attilio Stephen Musante, 1270 Jackson St., San Francisco, Cal., rec. by Jos. L. Lengfeld and Wm. M. Dordivenus.

No. 171. Oliver C. Buss, 162 N. Franklin St., Chicago, Ill., rec. by Chas. C. Orr and W. B. Day.

No. 172. Duane Earle Webster, North St., Grafton, Mass., rec. by John F. Correa, Jr., and Francis H. Tapley.

No. 173. William Hensge, 10500 Cedar Ave., Cleveland, Ohio, rec. by William C. Alpers and Wm. B. Day.

No. 174. Lillian Varsanger, 2354 Milwaukee Ave., Chicago, Ill., rec. by Mrs. M. M. Gray and Wm. B. Day.

J. W. ENGLAND,
Secretary of the Council.

415 N. Thirty-third Street.

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COUNCIL LETTER No. 25.

Philadelphia, Pa., June 3, 1915.

To the Members of the Council:

Gentlemen—*Motions No.* 39 (*Appropriation of* $50 *for A. Ph. A. Buttons and Pins*), *and No.* 40 (*Election of Members; Applications Nos.* 132 *to* 174, *inclusive*), have each received a majority of affirmative votes.

The following letter was received on May 31, 1915:

Mr. J. W. England, Secretary of the Council,
American Pharmaceutical Association, Philadelphia, Pa.:

MY DEAR SIR—The Bellevue Hotel is to be the Headquarters of the A. Ph. A. meeting at San Francisco, as you are aware. The change in the program proposed by Dr. Wulling is approved by the local committee.

I find it necessary to resign as Local Secretary as I am obliged to be away from San Francisco during the entire month of June and probably also the greater part of July. Mr. A. L. Leber, of 930 Tenth Street, Oakland, California, has been recommended to take my place. Mr. Leber has the leisure necessary to attend to the work, and is withal a good man for the place. I will turn over to him the correspondence and will assist him as much as I can. Yours very truly,

ALBERT SCHNEIDER.

Motion No. 41 (Resignation of Local Secretary Albert Schneider). Moved by G. M. Beringer, seconded by J. W. England, that the resignation of Albert Schneider as Local Secretary be accepted.

The Local Secretary is an officer of the Association, and must, of necessity, be a member. A. L. Leber of Oakland, California, is not a member of the American Pharmaceutical Association, and, of course, is ineligible for election as Local Secretary; a telegram was immediately sent to John H. Dawson, Associate Editor of the Pacific Pharmacist, asking him to consult the local members for choice of successor to Local Secretary Schneider, and the name of Mr. Dawson himself is recommended; address Pacific Pharmacist, 723 Pacific Building, San Francisco, Cal.

Motion No. 42 (Election of John H. Dawson as Local Secretary to succeed Local Secretary Albert Schneider, resigned). Moved by G. M. Beringer, seconded by J. W. England, that John H. Dawson be elected Local Secretary to succeed Local Secretary Albert Schneider, resigned.

Prompt action by the Council is necessary and members are requested to send in their votes soon.

J. W. ENGLAND,
Secretary of the Council.
415 N. Thirty-third Street.

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COUNCIL LETTER No. 26.

Philadelphia, Pa., June 9, 1915.

To the Members of the Council:

Gentlemen—*Motions No. 41 (Resignation of Local Secretary Albert Schneider)*, and *No. 42 (Election of John H. Dawson as Local Secretary to succeed Local Secretary Albert Schneider, resigned)*, have each received a majority of affirmative votes.

In Council Letter No. 14 (January 15, 1915), a *tentative* program for the sixty-third annual meeting of the American Pharmaceutical Association, to be held at San Francisco during the week of August 9 to 14, 1915, was submitted by the Committee on Program, and suggestions invited. The program as finally prepared is now submitted as follows:

Monday—
9:00 A. M.—Meeting of the Council.
3:00 P. M.—First General Session.
7:30 P. M.—House of Delegates.
8:30 P. M.—Meeting of Committee on Nominations.
Meeting of Committee on Resolutions.
9:30 P. M.—President's Reception.

Tuesday—
9:30 A. M.—Second General Session.
2:00 P. M.—Scientific Section.
Women's Section.
Joint Session of Commercial Section and Section on Education and Legislation.
7:30 P. M.—Meeting of the Council.
House of Delegates.
Ladies' Theatre Party.

Wednesday—
9:30 A. M.—Section on Education and Legislation.
Commercial Section.
12:30 P. M.—Luncheon of College Alumni.
2:00 P. M.—Scientific Section.
Section on Practical Pharmacy and Dispensing (Committee on Pharmacopœias and Formularies).
7:30 P. M.—Meeting of Council.
Ladies' Reception.

Thursday—
9:30 A. M.—Commercial Section.
Scientific Section.
Practical Pharmacy and Dispensing (Committee on Pharmacopœias and Formularies).
11:00 A. M.—Section on Education and Legislation.
2:00 P. M.—Joint Session of Section on Education and Legislation and A. C. P. F. and N. A. B. P.
Historical Pharmacy.
Women's Section.

7:30 P. M.—Meeting of the Council (Reorganization).
8:00 P. M.—House of Delegates.
Ladies' Reception.
Visit to Chinatown.

Friday—
9:00 A. M.—Meeting of the Council.
10:30 A. M.—Final General Session.
1:30 P. M.—Luncheon and Adjourned Final General Session at the Inside Inn, Exposition Grounds.
3:00 P. M.—Go-as-you-please Exposition Visit.
6:00 P. M.—Luncheon at the Inside Inn, Exposition Grounds.
7:30 P. M.—Exposition Visit Continued—The Concessions and Illuminations.

Saturday—

The Local Committee suggests that Saturday be given up to local visits and excursions, arranging the parties to suit. Some may desire to visit Mt. Tamalpais, others the Exposition, and still others may desire to go to the Muir Woods, the University in Berkeley, Golden Gate Park.

Do you approve the above program? This will be regarded as *Motion No.* 43 (*Approval of Program for* 1915 *Annual Meeting*).

J. W. ENGLAND,
Secretary of the Council.

415 N. Thirty-third Street.

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COUNCIL LETTER No. 27.

Philadelphia, Pa., June 21, 1915.

To the Members of the Council, Gentlemen:

Motion No. 43 (*Approval of Program for* 1915 *Annual Meeting*) has received a majority of affirmative votes.

Chairman Frank H. Freericks, of Section on Education and Legislation, wishes a 'Joint Session of the Section on Education and Legislation with the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy," scheduled for Thursday, August 12, 1915, at 2 p. m., and to this, it is presumed, there will be no objection.

Motion No. 44 (*Election of Members*). You are requested to vote on the following applications for membership:

No. 175. Walter C. Roessner, 204 W. Randolph St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

No. 176. Frank I. Given, M. D., Hillsboro, New Mexico, rec. by B. Ruppe and Wm. B. Day.

No. 177. Walter Arden Burkart, 4527 Garfield Ave., St. Louis, Mo., rec. by J. W. Mackelden and Glenn A. Burkart.

No. 178. Edward A. Ohm, 1667 Spring Lawn Ave., Cincinnati, Ohio, rec. by Theo. D. Wetterstroem and Frank Cain.

No. 179. Mrs. Janie A. Hagerty, Avon, S. D., rec. by Mrs. Hampton Ray Kenaston and Zada M. Cooper.

No. 180. Frederick Wm. Kisker, 806 Academy Ave., Cincinnati, Ohio, rec. by Frank Cain and Wm. B. Day (for reinstatement).

No. 181. Cornelius Beukma, 1215 South Akard St., Dallas, Texas, rec. by E. G. Eberle and C. A. Duncan.

No. 182. Wiliford Carl Hudgins, Grapevine, Texas, rec. by E. G. Eberle and Chester A. Duncan.

No. 183. William Stephen Disbrow, M. D., 151 Orchard St., Newark, N. J., rec. by E. A. Ruddiman and Wm. B. Day.

No. 184. Louis J. Burger, 215 N. Charles St., Baltimore, Md., rec. by Henry Kraemer and Freeman P. Stroup.

No. 185. Ralph Crawford Jennings, 114 William St., New York, N. Y., rec. by Donald McKesson and E. H. Gane.

No. 186. Jose Ramon Prieto, Agramonte 22, Cruces, Cuba, rec. by Zada M. Cooper and Wilbur J. Teeters.

No. 187. John Paul Snyder, 22 Hayes St., Norwich, New York, rec. by R. A. Stofer and J. Fred Windolph.

No. 188. James Numa Patterson, 486 Geary St., San Francisco, Cal., rec. by Frank Green and Hayden M. Simmons.

No. 189. Henry G. Momberg, 104 W. St. Clair St., Cincinnati, Ohio, rec. by Theo. D. Wetterstroem and Frank Cain.

No. 190. Frank M. Hayson, 743 N. LaSalle St., Chicago, Ill., rec. by F. H. Young and Wm. B. Day.

No. 191. Cosimo Ligorio, 1 Mott St., New York, N. Y., rec. by Wm. C. Anderson and Jacob H. Rehfuss.

No. 192. Samuel M. Fass, 112 Delencey St., New York, N. Y., rec. by Wm. C. Anderson and Jacob H. Rehfuss.

No. 193. Charles Jacob Koerber, Byberry Road, Torresdale, Pa., rec. by F. E. Stewart and J. W. Sturmer.

No. 194. Robert Wood Terry, Groveport, Ohio, rec. by Anna G. Bagley and Geo. B. Kauffman.

No. 195. Wm. E. Dyche, Texline, Texas, rec. by E. G. Eberle and C. A. Duncan.

No. 196. Peter Rupp, 541 Bermuda St., Algiers, La., rec. by Philip Asher and E. G. Eberle.

No. 197. John Richardson Taylor, New Iberia, La., rec. by Philip Asher and E. G. Eberle.

No. 198. Hypolite Rene Xrques, 917 N. Villere St., New Orleans, La., rec. by Philip Asher and E. G. Eberle.

No. 199. Marshall J. Demony, Mobile, Ala., rec. by Jas. C. Van Antwerp and E. G. Eberle.

No. 200. Adolph J. Toller, 417 West Third

St., Sioux City, Iowa, rec. by G. Scherling and Wm. B. Day.

No. 201. Louis Gershenfeld, 1732 South Ninth St., Philadelphia, Pa., rec. by C. H. LaWall and M. R. LaWall (prize membership for third year pharmacy, Philadelphia College of Pharmacy, awarded by Professor C. H. LaWall).

No. 202. Edward Frank Beranek, Ord, Neb., rec. by Henry R. Gering and Charles R. Sherman.

No. 203. Andrew B. McConnell, Omaha, Neb., rec. by Henry R. Gering and Charles R. Sherman.

No. 204. Karl M. Thelen, Shelby, Neb., rec. by Henry R. Gering and Charles R. Sherman.

No. 205. Harrie Jones, McClelland, Iowa, rec. by Henry R. Gering and Charles R. Sherman.

No. 206. Joseph F. McKinley, Leigh, Neb., rec. by Henry R. Gering and Charles R. Sherman.

No. 207. William Ludwig Schultz, Atkinson, Neb., rec. by Henry R. Gering and Charles R. Sherman.

No. 208. Will Brookley, Edgar, Neb., rec. by A. V. Pease and J. E. O'Brien.

No. 209. Emil J. Hermansky, 1415 Lincoln Ave., Omaha, Neb., rec. by Henry R. Gering and C. R. Sherman.

No. 210. Frederic Schuyler Pexton, 1006 Sixth St., Harlan, Iowa, rec. by Henry R. Gering and Charles R. Sherman.

No. 211. David Leslie Gaskill, 3721 Hamilton St., Omaha, Neb., rec. by Charles R. Sherman and Henry R. Gering.

No. 212. James G. McBride, University Place, Neb., rec. by Henry R. Gering and Charles R. Sherman.

No. 213. Walter Henry Cousins, 1804 Jackson St., Dallas, Texas, rec. by E. G. Eberle and R. H. Walker.

No. 214. Albert Martin Fischer, 523 E. Houston St., San Antonio, Texas, rec. by E. G. Eberle and R. H. Walker.

No. 215. Frank Adam Dinkler, Hennessey, Okla., rec. by E. G. Eberle and C. A. Duncan.

J. W. ENGLAND,
Secretary of the Council.

415 N. Thirty-third Street.

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WAR DEPARTMENT

List of changes of station covering period ending May 31, 1915, in the cases of Sergeants First Class and Sergeants, Hospital Corps, U. S. Army.

SERGEANTS FIRST CLASS.

Herbert N. Dean, from Field Hosp. 2, to the Philippine Islands.

Edward Crapo, from Ambulance Co. 2, to the Philippine Islands.

William E. Luse, from 18th Inf., to Ft. Huachuca, Ariz.

Geo. W. Manns, from Ft. Huachuca, to the 18th Infantry.

Maurice Kelly, from Port of Embarkation, to Ft. Monroe, Va.

Herman J. Weber, from Ft. Monroe, to Attending Surg. Office, Chicago.

John F. Newport, from Ft. Leavenworth, Kan., to Philippine Islands (July transport).

Robert S. McKenzie, from Letterman Gen. Hospital, to P. I. (June transport).

Charles Cooper Young, from P. I., to U. S. on furlough.

Joseph H. Hickson, from P. I., to U. S. on furlough.

Rush O. Day, from P. I. to U. S. on furlough.

Michael J. Hogan, from P. I., to U. S. on furlough.

Ray H. Couleman, from Ft. Porter, to Ft. McKinley, Me.

Francis M. Fitts, from Ft. McKinley, to Ft. Porter, N. Y.

Kenneth G Kincaid, from Letterman G. H., to under orders for P. I.

Thomas G. Bristow, from Letterman G. H., to Field Hosp. Co. 2.

Frank A. Crawford, from Transport "Logan," to Letterman Gen. Hosp.

August Siedler, from Letterman G. H., to transport "Logan."

Dell Timbrook, from Evacuation Hosp. 2, to 2d Division.

SERGEANTS.

John M. Toppins, from Army Med. School, to Ft. Sheridan, Ill.

John W. Friar, from Ft. Slocum, N. Y., to Hawaiian Department, H. T.

Joseph A. Plank, from Ft. Howard, Md., to Ft. Grant, C. Z.

George C. Burke, from P. I. to U. S. on furlough.

Nathan Markowitz, from P. I. to Ft. Robinson, Neb.

Morton Wiener, from Ft. Bayard, N. M., to P. I.

Harvey A. Utter, from Ft. Slocum, N. Y., to P. I.

Charles S. Sly, from Letterman G. H., to 22d Inf.

Raymond H. Brookins, from 22d Inf., to Letterman Gen. Hosp.

George A. Bissonette, from Columbus Bks., to Field Hosp Co. 1.

George A. Roberts, from Ft. Porter, N. Y., to Ft. Ethan Allen, Vt.

Marshall Ellis, Jr., from Ft. Terry, N. Y., to Ft. Michie, N. Y.

Warner P. Roden, from Evacuation Hosp. 2, to 2d Division.

Clyde A. Speight, from Evacuation Hosp. 2. to 2d Division.

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U. S. PUBLIC HEALTH NOTICE.

Acting Assistant Surgeon Wyatt Barnes. Granted three days' leave of absence from June 1, 1915. May 29, 1915.

Pharmacist J. V. LaGrange. Granted one day's leave of absence, May 28, 1915. May 28, 1915.

Pharmacist C. G. Carlton. Directed to proceed when necessary to the trachoma hospitals at Hindman, London, and Jackson, Ky., and to the trachoma hospitals to be established in Virginia and West Virginia to attend to details connected with their establishment and maintenance.

Pharmacist J. Y. Breckenridge, Jr. Directed to proceed immediately to Vineyard Haven, Mass., for temporary duty. May 29, 1915.

BOARDS CONVENED.

Medical officers assigned to duty on Coast Guard Retiring Boards as follows:

Baltimore, Md.: Surgeon C. W. Vogel, Assistant Surgeon J. M. Stewart.

Boston, Mass.: Surgeon B. W. Brown. Acting Assistant Surgeon F. H. Cleaves.

New York, N. Y.: Senior Surgeon G. W. Stoner. Passed Assistant Surgeon C. P. Knight. May 26, 1915.

Official:

A. H. GLENNAN,

Acting Surgeon-General.

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MARGARINE FROM SUNFLOWERS.

The production of margarine from sunflower seeds is the latest device attributed to the German Government to meet the expected scarcity of butter, according to a dispatch to the Exchange Telegraph Company from Amsterdam. The message says the Prussian Ministry of Railroads has ordered all station masters to plant sunflowers in every bit of available ground around the depots.

Sunflower seeds, it is claimed, yield an oil that can be used in the manufacture of substitutes for butter.

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FOR SMOKERS ONLY.

Cholly: When I was a boy, you know, the doctor said if I didn't stop smoking cigarettes I would become feeble-minded.

Miss Keen: Well, why didn't you stop?—London Evening Standard.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.

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WILSON, C. F.,
From 355 E. 30th St., Chicago, Ill.
To 6857 S. State St., Chicago, Ill.

POWERS, EMMETT,
From 932 E. 25th St., Denver, Colo.
To 919 E. 25th St., Denver, Colo.

RILEY, J. A.,
From 355 W. 123d St., New York, N. Y.
To Residence unknown.

YEOMANS, S. C.,
From Long Beach, Cal.
To Residence unknown.

GORDON, JEAN,
From Englewood Hospital, Chicago, Ill.
To 1415 Byron Street.

HENRY, ARTHUR M.,
From Tallahasse, Fla.
To Homestead, Fla.

STAMM, DONALD F.,
From Chestertown, Md.
To Easton, Md.

VENNEMANN, H.,
From 200 W. Indiana Ave., St. Paul, Minn.
To 1023 White Bear Ave., St. Paul Minn.

ROON, LEO.
From 15 Main St., Port Washington, N. Y.
To Broadway and Baxter Ave., Elmhurst, L. I., N. Y.

DIETZ, H .W.,
From Field Hospital No. 4, Ft. Wm. McKinley, Rizal, P. I.
To residence unknown.

REPORT OF THE TREASURER OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

JANUARY 1, 1914, TO JANUARY 1, 1915.

Receipts.

Cash on hand January 1, 1914			$5599 39
Annual dues and Journal, 1912 (July 1, 1912, to Jan. 1, 1913)	$2 50		
Annual dues and Journal, 1913 (Jan. 1, 1913, to Jan. 1, 1914)	20 00		
Annual dues and Journal, 1914 (July 1, 1914, to Jan. 1, 1915)	5 00		
Annual dues and Journal, 1914 (Jan. 1, 1914, to Jan. 1, 1915)	7010 00		
Annual dues and Journal, 1915 (Jan. 1, 1915, to Jan. 1, 1916)	1655 00		
Annual dues and Journal, 1915 (July 1, 1915, to Jan. 1, 1916)	5 00		
Annual dues and Journal, 1916 (Jan. 1, 1916, to Jan. 1, 1917)	5 00		
		8702 50	
Dues only of the A. Ph. A		24 00	
Sale of 6 parchment certificates @ $5 00	$30 00		
Sale of 3 paper certificates @ 3 00	9 00		
		39 00	
National Formulary		2732 03	
Badges and bars		26 60	
Proceedings		113 07	
Journal advertising		3564 03	
Journal subscriptions		300 84	
Miscellaneous		4 00	
Interest on bonds	$400 00		
Interest on deposit, International Bank of St. Louis	196 05		
		596 05	
Bank exchange		1 06	
Year-Book		3 20	
Reprints		58 75	
Sale of 90 solid gold buttons @ $1.00	90 00		
Sale of 131 gold-plated buttons @ 25 cents	32 75		
Sale of 34 gold-plated pins @ 25 cents	8 50		
		131 25	
Centennial Fund	$30 00		
Life Membership Fund	390 00		
Procter Monument Fund	600 00		
Ebert Legacy Fund, interest on bonds	80 00		
Ebert Legacy Fund, deposited for disbursement	30 09		
		1130 09	
Bank Interest from Jan. 1, 1914, to Jan. 1, 1915.			
Interest (Ebert Legacy Fund)	$35 05		
Interest (Procter Monument Fund)	60 35		
Interest (Rice Memorial Fund)	2 70		
		98 10	
Total			$23,123 96

Disbursements by Voucher Checks.

Jan.	5.	Check	2238	The National Drug Trade Conference		$25 00
"	5.	"	2239	John J. Miller, Journal		31 40
"	5.	"	2240	F. W. Nitardy, Section Education and Legislation		20 32
"	5.	"	2241	Ernest C. Marshall, Journal		45 75
"	9.	"	2242	Anna G. Bagley, clerical		30 00
"	9.	"	2243	Ernest C. Marshall, Proceedings and Year-Book		3 39
"	9.	"	2244	E. F. Greathead, printing, postage and stationery		11 90
"	9.	"	2245	The Stoneman Press Co., Journal	$333 73	
				Printing, postage and stationery	6 50	340 23

Jan.	9.	"	2246	C. H. Packard, membership		35 09
"	9.	"	2247	Wickersham Printing Co., National Formulary		23 33
"	9.	"	2248	J. H. Beal, clerical	60 00	
				Journal	13 72	
				Printing, postage and stationery	10 00	
				Freight, drayage and cartage	8 58	
				Journal for Reporters on Progress of Pharmacy	2 54	
				Miscellaneous	4 00	98 84
"	9.	"	2249	H. L. Taylor, Syllabus Comm		25 00
"	26.	"	2250	The Stoneman Press Co., Journal	63 50	
				Printing, postage and stationery	7 50	71 00
"	26.	"	2251	Irving-Pitt Mfg. Co., Unofficial Standards		28 03
"	26.	"	2252	Louis C. Hesse, printing, postage and stationery		6 50
"	26.	"	2253	W. T. Robinson, printing, postage and stationery		3 50
"	26.	"	2254	E. Fullerton Cook, National Formulary	21 29	
				Section on Pharmacopœias and Formulary	9 14	30 43
"	26.	"	2255	John C. Wallace, National Drug Trade Conference		52 45
"	26.	"	2256	W. T. Robinson, printing, postage and stationery		5 50
Feb.	19.	"	2257	Anna G. Bagley, clerical		30 00
"	19.	"	2258	H. M. Whelpley, printing, postage and stationery		79 60
"	19.	"	2259	St. Louis Paper, Can & Tube Co., miscellaneous		3 24
"	19.	"	2260	Midland Publishing Co., freight, drayage and express		6 40
"	19.	"	2261	Wickersham Printing Co., National Formulary		117 32
"	19.	"	2262	The Stoneman Press Co., Women's Section	10 00	
				Journal	447 95	
				Status of Pharmacists	3 00	460 95
"	19.	"	2263	The Stoneman Press Co., printing, postage and stationery		10 50
"	19.	"	2264	J. H. Beal, clerical	60 00	
				Journal	45 51	
				Journal for Reporters on Progress of Pharmacy	22 30	
				Printing, postage and stationery	10 25	
				Freight, express and drayage	7 92	
				Miscellaneous	2 65	148 63
"	27.	"	2265	James Arnold, National Formulary		6 00
"	27.	"	2266	Louis C. Hesse, printing, postage and stationery		4 00
"	27.	"	2267	The Stoneman Press Co., Journal	379 34	
				Printing, postage and stationery	11 50	
				Journal	14 25	405 09
March	5.	"	2268	McLean & Boone, stenographers		250 00
"	5.	"	2269	Whitehead & Hoag Co., buttons and pins		229 15
"	5.	"	2270	W. H. Chaflin Co., membership		4 21
"	5.	"	2271	A. Stores & Bement Co., membership		6 15
"	5.	"	2272	Samuel Ward Mfg. Co., membership		8 75
"	5.	"	2273	Rapid Service Press Co., membership		27 50

March	5.	"	2274	W. B. Day, Committee on Status of Pharmacy			44 65
"	5.	"	2275	Anna G. Bagley, clerical			30 00
"	28.	"	2276	The Stoneman Press Co., printing, postage and stationery			53 00
"	28.	"	2277	The Stoneman Press Co., Journal			532 83
"	28.	"	2278	The Midland Publishing Co., Women's Section			4 79
"	28.	"	2279	Whitehead-Hoag Co., buttons and pins			4 35
"	28.	"	2280	E. F. Greathead, printing, postage and stationery			20 13
"	28.	"	2281	F. W. Nitardy, Practical Pharmacy and Dispensing			9 24
"	28.	"	2282	Shallcross Printing & Stationery Co., miscellaneous			3 50
"	28.	"	2283	Louis C. Hesse, printing, postage and stationery			4 25
"	28.	"	2284	McLean & Boone, stenographers			100 00
"	28.	"	2285	J. H. Beal, clerical	60 00		
				Journal	26 42		
				Printing, postage and stationery	10 00		
				Freight, express and drayage	3 02		
				Miscellaneous	85		100 29
"	28.	"	2286	John C. Wallace, National Drug Trade Conference			41 25
"	28.	"	2287	J. H. Beal, National Drug Trade Conference			85 14
April	11.	"	2288	J. H. Beal, clerical	60 00		
				Journal	23 87		
				Printing, postage and stationery	22 60		
				Freight, express and drayage	2 63		
				Miscellaneous	2 00		111 10
"	11.	"	2289	J. H. Beal, salaries			1000.00
"	11.	"	2290	Ernest C. Marshall, salaries	125 00		
				Printing, postage and stationery	2 00		127 00
"	11.	"	2291	Anna G. Bagley, clerical			30 00
"	11.	"	2292	Wickersham Printing Co., National Formulary			92 00
"	11.	"	2293	Louis C. Hesse, printing, postage and stationery			7 00
"	29.	"	2294	F. W. Nitardy membership			2 00
"	29.	"	2295	Stoneman Press Co., Journal	3 00		
				Printing, postage and stationery	7 35		10 35
"	29.	"	2296	Louis C. Hesse, printing, postage and stationery			8 50
"	29.	"	2297	Ernest C. Marshall, salaries	125 00		
				Printing, postage and stationery	3 00		128 00
"	29.	"	2298	C. H. Packard, membership			85 20
"	29.	"	2299	E. F. Greathead, printing, postage and stationery			7 75
"	29.	"	2300	W. B. Day, Committee on Status of Pharmacy			5 53
"	29.	"	2301	Underwood Typewriter Co., National Formulary			4 48
"	29.	"	2302	E. Fullerton Cook, National Formulary			34 50
May	7.	"	2303	Ernest C. Marshall, salaries			125 00
"	7.	"	2304	Anna G. Bagley, clerical			30 00
"	7.	"	2305	J. W. England, printing, postage and stationery			29 18
"	7.	"	2306	Wickersham Printing Co., National Formulary			34 48

May	7.	"	2307	J. H. Beal, clerical	60 00	
				Journal	18 13	
				Printing, postage and stationery	10 00	
				Freight, express and drayage	2 09	
				Miscellaneous	4 50	94 72
"	7.	"	2308	Stoneman Press Co., Journal	416 71	
				Printing, postage and stationery	31 50	
				Printing, postage and stationery	8 50	
				Journal	32 20	488 91
"	22.	"	2309	E. F. Greathead, printing, postage and stationery		6 90
"	22.	"	2310	Stoneman Press Co., printing, postage and stationery		12 00
"	22.	"	2311	Louis C. Hesse, printing, postage and stationery		21 50
June	10.	"	2312	Geo. Wirsing, printing, postage and stationery		5 75
"	10.	"	2313	Anna G. Bagley, clerical		30 00
"	10.	"	2314	Pyne Point Press, Unofficial Standards		2 50
"	10.	"	2315	Wickersham Printing Co., National Formulary		23 00
"	10.	"	2316	E. F. Greathead, printing, postage and stationery		11 90
"	10.	"	2317	Louis C. Hesse, printing, postage and stationery		3 00
"	10.	"	2318	Ernest C. Marshall, Journal	18 50	
				Salaries	125 00	
				Printing, postage and stationery	15 40	
				Miscellaneous	3 25	162 15
"	10.	"	2319	The Stoneman Press Co., Journal	429 57	
				Proceedings and Year-Book	23 00	
				Journal	10 35	
				Proceedings and Year-Book	1689 50	2152 42
"	10.	"	2320	Midland Publishing Co., printing, postage and stationery		12 21
"	22.	"	2321	J. H. Beal, salaries		666 66
"	22.	"	2322	J. H. Beal, clerical	60 00	
				Journal	33 30	
				Printing, postage and stationery	10 00	
				Freight, express and drayage	6 67	
				Miscellaneous	1 20	111 17
July	1.	"	2323	Louis C. Hesse, printing, postage and stationery		6 50
"	1.	"	2324	E. F. Greathead, printing, postage and stationery		4 50
"	1.	"	2325	George M. Beringer, Committee on Unofficial Standards		33 21
"	1.	"	2326	Frank L. McCartney, membership		22 00
"	1.	"	2327	Stoneman Press Co., Journal	483 88	
				Printing, postage and stationery	14 25	
				Year-Book	3 10	501 23
"	1.	"	2328	Ernest C. Marshall, miscellaneous	12 75	
				Journal	17 96	
				Clerical	60 00	
				Year-Book	244 99	
				Printing, postage and stationery	3 15	338 85

July	7.	"	2329	Ernest C. Marshall, salaries		125 00
"	23.	"	2330	C. Lewis Diehl, salary as reporter from Jan. 1, 1914, to July 1, 1914		600 00
August	8.	"	2331	Hammond Typewriter Co., printing, postage and stationery		1 57
"	8.	"	2332	J. W. England, salary	150 00	
				Printing, postage and stationery	35 03	185 03
"	8.	"	2333	E. F. Greathead, printing, postage and stationery		11 90
"	8.	"	2334	Howe Addressing Co., printing, postage and stationery		4 60
"	8.	"	2335	Freeman Printing Co., printing, postage and stationery		15 00
"	8.	"	2336	W. M. Welch, Mfg. Co., certificates		30 00
"	8.	"	2337	Wickersham Printing Co., National Formulary		94 32
"	8.	"	2338	H. K. Myers, insurance		2 75
"	8.	"	2339	F. W. Nitardy, buttons and pins	1 75	
				Practical Pharmacy and Dispensing	14 80	16 55
"	8.	"	2340	A. H. Fetting, badges and bars		14 00
"	8.	"	2341	E. Fullerton Cook, National Formulary		46 98
"	8.	"	2342	Wilkinson Bros. Co., National Formulary		5 00
"	8.	"	2343	Henry M. Whelpley, printing, postage and stationery	91 07	
				Miscellaneous	18 65	
				Express	22	109 94
"	8.	"	2344	Stoneman Press Co., Journal	418 97	
				National Formulary	9 50	
				Year-Book and Proceedings	32 50	460 97
"	8.	"	2345	Ernest C. Marshall, miscellaneous	97	
				Express	15	
				Printing, postage and stationery	32 87	
				Clerical expenses, Secretary's office	60 00	
				Journal	16 65	
				Traveling expenses	16 75	
				Salary	375 00	502 39
"	8.	"	2346	Louis C. Hesse, printing, postage and stationery		21 25
"	8.	"	2347	J. H. Beal, printing, postage and stationery	6 70	
				Express	2 93	
				Miscellaneous	1 75	11 38
"	8.	"	2348	John Block, certificates		10 00
"	8.	"	2349	Henry M. Whelpley, salary Jan. 1 to July 1		500 00
"	8.	"	2350	Whitehead & Hoag Co., buttons and pins		50 00
Sept.	7.	"	2351	Stoneman Press Co., printing, postage and stationery	28 00	
				Proceedings and Year-Book	151 01	
				Journal	527 75	706 76
"	7.	"	2352	The Gast Bank Note Co., certificates of membership and new stone		37 50
"	7.	"	2353	E. F. Greathead, printing, postage and stationery		11 90
"	7.	"	2354	Louis C. Hesse, buttons and pins	3 50	
				Printing, postage and stationery	5 25	8 75

Sept.	7.	"	2355	Ernest C. Marshall, clerical expenses, Secretary's office	90 00	
				Traveling expenses	49 27	
				Journal	22 02	
				Freight, express and drayage	6 62	
				Miscellaneous	1 85	
				Printing, postage and stationery	8 86	
				Salary	250 00	428 62
"	7.	"	2356	Thomas F. Main, miscellaneous	82	
				Printing, postage and stationery	10 76	11 58
"	10.	"	2357	Diehl Office Equipment Co., journal		5 55
"	10.	"	2358	Freeman Printing Co., printing, postage and stationery		18 13
"	10.	"	2359	Geo. M. Beringer, printing, postage and sta-stationery		29 00
"	10.	"	2360	Howe Addressing Co., printing, postage and stationery		3 45
"	10.	"	2361	C. H. Packard, membership		97 75
"	10.	"	2362	C. H. Packard, membership		140 42
"	10.	"	2363	R. A. Kuever, stenographers		1 50
"	10.	"	2364	Clyde M. Snow, printing, postage and stationery		2 10
"	10.	"	2365	C. Lewis Diehl, National Formulary		21 20
"	24.	"	2366	J. W. England, printing, postage and stationery		17 99
"	24.	"	2367	J. W. England, traveling expenses		57 00
Oct.	1.	"	2368	Louis C. Hesse, printing, postage and stationery		2 75
"	1.	"	2369	W. T. Robinson, printing, postage and stationery		5 50
"	1.	"	2370	E. Fullerton Cook, expenses exhibit of U. S. P. and N. F. Committee		37 15
"	1.	"	2371	S. L. Hilton, expenses attending National Formulary Meeting		44 65
"	1.	"	2372	Clyde M. Snow, expenses attending National Formulary Meeting		30 28
"	1.	"	2373	George M. Beringer, expenses attending National Formulary Meeting		46 39
"	1.	"	2374	E. Fullerton Cook, expenses attending National Formulary Meeting		39 00
"	1.	"	2375	C. Lewis Diehl, expenses attending National Formulary Meeting		32 25
"	1.	"	2376	Edsel A. Ruddiman, Section on Scientific Papers		10 40
"	1.	"	2377	L. D. Havenhill, Pharmacopœias and Formulary		9 43
"	1.	"	2378	E. N. Gathercoal, membership		12 00
"	5.	"	2379	Louis C. Hesse, printing, postage and stationery		4 75
"	5.	"	2380	F. W. Nitardy, Practical Pharmacy and Dispensing		1 35
"	5.	"	2381	H. M. Whelpley, traveling expenses	61 35	
				Printing, postage and stationery	54 42	
				Miscellaneous	6 80	
				Express	1 07	123 64

Oct.	7.	"	2382	W. B. Day, clerical	20 25	
				Printing, postage and stationery	5 00	
				National Formulary	1 71	
				Express	2 67	29 63
"	7.	"	2383	E. C. Marshall, salaries	187 50	
				Clerical	48 00	
				Journal	3 30	
				Year-Book	21	239 01
"	7.	"	2384	J. G. Godding, Women's Section		6 54
"	7.	"	2385	Walter J. Watson, studio journal		2 00
"	7.	"	2386	Hammond Typewriter Co., journal		7 40
"	9.	"	2387	Wickersham Printing Co., National Formulary		69 00
"	9.	"	2388	Stoneman Press Co., Journal		473 57
"	9.	"	2389	Midland Publishing Co., Women's Section	5 65	
				Journal	4 89	10 54
"	20.	"	2390	W. T. Robinson, printing, postage and stationery		41 50
"	20.	"	2391	W. B. Day, printing, postage and stationery		50 00
"	20.	"	2392	H. M. Whelpley, printing, postage and stationery		21 20
"	20.	"	2393	Louis C. Hesse, printing, postage and stationery		21 75
"	20.	"	2394	Fidelity & Deposit Co., premium on Treasurer's bond		37 50
"	20.	"	2395	Stoneman Press, Journal		36 00
"	20.	"	2396	H. V. Arny, expenses attending National Formulary Meeting		9 00
"	20.	"	2397	W. R. White, membership		9 00
"	20.	"	2398	George M. Beringer, Committee on Unofficial Standards		28 39
"	29.	"	2399	Louis C. Hesse, printing, postage and stationery		4 25
"	29.	"	2400	E. F. Greathead, printing, postage and stationery		18 80
"	29.	"	2401	Louis C. Hesse, printing, postage and stationery		1 25
"	29.	"	2402	National Committee on Pharmaceutical Syllabus, National Syllabus Committee		25 00
Nov.	3.	"	2403	A. H. Fetting, badges and bars		7 10
"	3.	"	2404	Armstrong & Okey, stenographers		379 18
"	10.	"	2405	W. B. Day, clerical	40 00	
				Printing, postage and stationery	10 00	
				National Formulary	1 05	51 05
"	10.	"	2406	Ohio State Telephone Co., Journal		10 00
"	10.	"	2407	Diehl Office Equipment Co., Journal		2 15
"	10.	"	2408	Stoneman Press Co., Journal		402 74
"	10.	"	2409	E. C. Marshall, salaries		187 50
"	10.	"	2410	E. C. Marshall, Journal	49 82	
				Clerical	46 00	
				Printing, postage and stationery	10 50	106 32
"	13.	"	2411	James Arnold, National Formulary		19 20
"	13.	"	2412	J. B. Lippincott Co., National Formulary		8 00
"	13.	"	2413	Wickersham Printing Co., National Formulary		27 02

Nov.	14.	"	2414	Louis C. Hesse, printing, postage and stationery			2 75
"	14.	"	2415	James Arnold, Committee on Unofficial Standards			8 50
"	14.	"	2416	E. F. Greathead, printing, postage and stationery			3 25
"	17.	"	2417	A. J. Eggers & Co., Section on Education and Legislation			7 75
"	17.	"	2418	E. Fullerton Cook, Section on Pharmacopœias and Formulary			5 00
"	17.	"	2419	E. Fullerton Cook, expenses of exhibit on Section on Pharmacopœias and Formulary			13 29
"	19.	"	2420	E. Fullerton Cook, National Formulary			41 79
"	19.	"	2421	George M. Beringer, Committee on Unofficial Standards			34 78
"	28.	"	2422	Blumenberg Press, printing, postage and stationery			4 50
Dec.	7.	"	2423	Louis C. Hesse, printing, postage and stationery			1 25
"	7.	"	2424	F. T. Gordon, printing, postage and stationery			5 00
"	10.	"	2425	W. B. Day, traveling expenses			27 95
"	10.	"	2426	W. B. Day, clerical	32 00		
				Printing, postage and stationery	10 00		
				National Formulary	1 02		43 02
"	10.	"	2427	Stoneman Press Co., Journal			410 93
"	10.	"	2428	Ernest C. Marshall, salaries			187 50
"	10.	"	2429	Diehl Office Equipment Co., printing, postage and stationery			1 75
"	10.	"	2430	E. C. Marshall, clerical	60 00		
				Printing, postage and stationery	10 00		
				Journal	19 06		
				Express	30		
				Miscellaneous	19		89 55
"	10.	"	2431	Stoneman Press Co., Journal			25 65
"	10.	"	2432	Hammond Typewriter Co., Journal			3 00
"	10.	"	2433	E. Fullerton Cook, printing, postage and stationery			1 72
"	10.	"	2433½	Theo. C. Hagenow, membership (St. Louis Branch)			47 00
"	10.	"	2434	Otto Raubenheimer, expense attending N. F. Committee			48 00
"	17.	"	2435	Louis C. Hesse, printing, postage and stationery			1 25
"	15.	"	2436	E. F. Cook, National Formulary			4 20
"	15.	"	2437	W. L. Scoville, National Formulary			5 61
"	15.	"	2438	Louis C. Hesse, printing, postage and stationery			1 25
"	15.	"	2439	Wilkinson Bros. & Co., National Formulary			20 90
"	18.	"	2440	E. F. Greathead, printing, postage and stationery			11 90
"	22.	"	2441	H. M. Whelpley, salaries			500 00
"	22.	"	2442	W. B. Day, salaries			250 00
"	24.	"	2443	G. D. Spiker & Son, miscellaneous			43 89
"	24.	"	2444	John C. Wallace, National Drug Trade Conference			47 56

Dec.	24.	"	2445	H. M. Whelpley, printing, postage and stationery	50 35	
				Miscellaneous	3 50	53 85
"	24.	"	2446	J. W. England, salaries		150 00
"	24.	"	2447	J. H. Beal, freight, express and drayage	84 36	
				Traveling expenses	18 30	102 66
"	30.	"	2448	J. W. England, printing, postage and stationery		41 12
"	30.	"	2449	Louis C. Hesse, printing, postage and stationery		15 50
"	30.	"	2450	Chas. M. Woodruff, National Drug Trade Conference		50 00
"	30.	"	2451	C. Lewis Diehl, salaries		600 00
				Total		$20,374 30

Cash Received and Disbursed for Ebert Legacy Fund by Check.

Jan.	16.	Check	2117	Theodore Flynn, village collector, opening of Elder Lane	$14 20	
"	28.	"	2118	Carlton Prouty, collector real estate tax	15 89	30 09

Cash Received and Disbursed Without Checks.

Centennial Fund	$30 00	
Life Membership Fund	390 00	
Ebert Legacy Fund	80 00	
Procter Monument Fund	600 00	1100 00

Interest from Jan. 1, 1914, to Jan. 1, 1915.

Ebert Legacy Fund	$35 05	
Procter Monument Fund	60 35	
Rice Memorial Fund	2 70	98 10
Total amount of disbursements		$21,602 49

SUMMARY OF DISBURSEMENTS.

Salaries	$6229 16
Journal	5863 32
Printing, postage and stationery	1287 76
Clerical expenses, Secretary's office	996 25
National Formulary	732 90
Drayage, freight and express	135 63
Miscellaneous expenses	116 36
Stenographers	730 68
Traveling expenses	230 62
Committee on Membership	497 07
Committee on Unofficial Standards	135 41
Proceedings and Year-Book	2147 70
Buttons and pins	288 75
Certificates	77 50
Premium on Treasurer's bond	37 50
Insurance	2 75
Journal for Reporters on Progress of Pharmacy	24 84
Section on Scientific Papers	10 40
Section on Education and Legislation	28 07
Section on Practical Pharmacy	25 39
Section on Pharmacopœias and Formularies	23 57
Women's Section	26 98
National Syllabus Committee	50 00
National Drug Trade Conference	301 40
Status of Pharmacists in Government Service	53 18

Badges and bars	21 10		
Traveling expenses attending National Formulary Committee	249 57		
Expenses Exhibit on Pharmacopœias and Formulary	50 44	$20,374 30	
Payment out of Ebert Legacy Fund (taxes)		30 09	
To Ebert Legacy Fund	80 00		
To Centennial Fund	30 00		
To Life Membership Fund	390 00		
To Procter Monument Fund	600 00	1100 00	
Bank Interest from Jan. 1, 1914, to Jan. 1, 1915.			
Ebert Legacy Fund	$35 05		
Procter Monument Fund	60 35		
Rice Memorial Fund	2 70	98 10	
Total amount of disbursements		$21,602 49	
Cash on hand, January 1, 1915		1,521 47	
Total		$23,123 96	

A. Ph. A. Appropriations and Disbursements, January 1, 1915.

	Appropriations	Expenditures
Salaries	$6500 00	$6229 16
Journal	6000 00	5863 32
Printing, postage and stationery	1400 00	1287 76
Clerical expenses, Secretary's office	1000 00	996 25
National Formulary	1000 00	732 90
Freight, expressage and drayage	150 00	135 63
Miscellaneous	300 00	116 36
Stenographers	730 68	730 68
Traveling expenses	300 00	230 62
Committee on Membership	750 00	497 07
Committee on Unofficial Standards	300 00	135 41
Proceedings and Year-Book	2500 00	2147 70
Buttons and pins	300 00	288 75
Certificates	50 00	77 50
Premium on Treasurer's bond	50 00	37 50
Journal for reporters on Progress of Pharmacy	35 00	24 84
Section on Scientific Papers	25 00	10 40
Section on Education and Legislation	25 00	28 07
Section on commercial interest	25 00	.....
Section on Practical Pharmacy	25 00	25 39
Section on Historical Pharmacy	50 00	.....
Section on Pharmacopœias and Formularies	75 00	23 57
Women's Section	25 00	26 98
National Syllabus Committee	50 00	50 00
National Drug Trade Conferenceœ	275 00	301 40
Status of Pharmacist in Government Service	100 00	53 18
Badges and bars	50 00	21 10
Traveling expenses attending National Formulary Committee	400 00	249 57
Section on Pharmacopœias	50 00	.....
Insurance	50 00	2 75
Expense of Exhibit on Pharmacopœias and Formulary	50 00	50 44
Appropriations	$22,640 68	$20,374 30
Expenditures	20,374 30	
Unexpended balance	$2,266 38	

The Permanent Funds, January 1, 1915.

	1914	1915
Life Membership Fund	$19699 03	$20363 05
Endowment Fund	5828 07	6063 51
Ebert Leacy Fund	3144 22	3290 42
Centennial Fund	1039 40	1081 38
	$32446 67	$33634 71
		32446 67
Net increase during fiscal year		$ 1188 04

The Association Assets, January 1, 1915.

Cash in bank	$ 1521 47		
Bonds	10000 00		
Available assets		$11521 47	
Permanent funds		33634 71	
Total Association assets			$45156 18
Procter Monument Fund (held in trust)		$ 7473 90	
College Prize Fund (held in trust)		35 54	
Rice Memorial Fund (held in trust)		170 91	
			7680 35
Grand total			$52836 43

DETAILED STATEMENT OF THE SEVERAL FUNDS.

Life Membership Fund. (Established in 1870.)

Balance from old account viz.:			
Massachusetts State bonds			$13000 00
Boston Penny Savings Bank, January 1, 1914		$6699 03	
Interest on deposit in Boston Penny Savings Bank	$274 02		
Interest on Massachusetts State bonds	390 00		
Deposited in Boston Penny Savings Bank (January 1, 1914, to January 1, 1915)		664 02	
			7363 05
Total on hand January 1, 1915			$20363 05

Ebert Prize Fund. (Established in 1873.)

Balance from old account	$ 1039 40
Interest on deposit in Boston Penny Savings Bank	41 98
Total on hand January 1, 1915	$ 1081 38

Centennial Fund. (Established in 1877.)

Balance from old account viz.:			
Massachusetts 3% registered bond			$ 1000 00
Boston Penny Savings Bank, January 1, 1914		$1735 95	
Interest on bond	$30 00		
Interest on Boston Penny Savings Bank	70 40		
Deposited in Boston Penny Savings Bank (January 1, 1914, to January 1, 1915)		100 40	1836 35
Total on hand January 1, 1915			$ 2836 35

Endowment Fund. (Established in 1906.)

Balance from old account January 1, 1914			$5828 07
Interest on deposit in Boston Penny Savings Bank			235 44
Total on hand January 1, 1915			$6063 51

Ebert Legacy Fund. (Established in 1906.)

St. Louis City registered gold bond			$2000 00
Balance from old account	$1144 22		
Check not cashed (not yet due)	$61 24		
Interest on St. Louis	80 00		
Interest on deposit International Bank	35 05	176 29	$1320 51
Disbursed for taxes	15 89		
Disbursed for opening Elder Lane	14 20	30 09	
Cash on hand January 1, 1915			1290 42
Total on hand January 1, 1915			$3290 42

Procter Monument Fund. (Established in 1904.)
(Held in Trust.)

Balance from old account, viz.:			
Placed on time deposit in International Bank January 1, 1914		$4627 37	
Interest on deposit @ 4% January 1 to December 31, 1914		185 09	$4812 46
Certificate No. 61358 of deposit in International Bank January 1, 1914	$2001 09		
Interest on deposit in International Bank, January 1 to December 31, 1914	60 35		
Contributions, viz.:			
August 2. Henry S. Welcome	$100 00		
December 31. C. E. Hires	500 00	600 00	
Cash on hand International Bank, January 1, 1915			$2661 44
Total on hand January 1, 1915			$7473 90

College Prize Fund. (Established in 1905.)
(Held in Trust.)

Balance from old account January 1, 1914	$34 18
Interest on Boston Penny Savings Bank	1 36
Total on hand January 1, 1915	$35 54

Rice Memorial Fund. (Established in 1913.)
(Held in Trust.)

Balance from old account January 1, 1914	$168 21
Interest on deposit, International Bank, January 1, 1914, to January 1, 1915	2 70
Total on hand January 1, 1915	$170 91

January 1, 1915. HENRY M. WHELPLEY, Treasurer.

REPORT ON INVESTED FUNDS OF THE ASSOCIATION.

ST. LOUIS, MO., June 11, 1915.

To the Officers and Members of the American Pharmaceutical Association:

We, the undersigned, have, in accordance with Rule 8 of General Rules of Finance, examined the securities contained in the Association Box (4227) at the Title Guaranty Trust Co., St. Louis, and found the following:

Ebert Legacy Fund.

St. Louis Bond No. 766	$ 2,000 00

A. Ph. A. General Fund Bonds.

5 St. Louis City Reg. 4 percent Bonds Nos. 705, 706, 707, 708, 709	$ 5,000 00
1 St. Louis City Reg. 4 percent Bond, No. 717	5,000 00
Total	$10,000 00

A. Ph. A. Centennial Fund Bond.

1 Mass. State Reg. 3 percent Bond, No. 1705	$ 1,000 00

A. Ph. A. Life Membership Fund Bonds.

1 Mass. State Reg. 3 percent Bond, No. 1701	$10,000 00
3 Mass. State Reg. 3 percent Bonds, Nos. 1702, 1703, 1704	3,000 00
Total	$13,000 00

A. Ph. A. Procter Monument Fund.

Certificate of Deposit, No. 62,205, dated January 2, 1915, International Bank of St. Louis (principal)	$ 4,812 46

(Signed) H. M. WHELPLEY,
Treasurer.

(Signed) FRED W. SULTAN,
Member, Auditing Committee.

Subscribed and sworn to before me this eleventh day of June, 1915.

(Seal) SIDNEY SCHUELE,
Notary Public, City of St. Louis, Missouri.

(My commission expires November 19, 1917. (Stamp.)

OFFICERS OF WOMEN'S SECTION

President—MRS. JOHN CULLEY, 2579 Monroe Avenue, Ogden, Utah.
Honorary President—MRS. S. A. D. SHEPPARD, 1129 Washington Street, Boston, Mass.
First Vice President—MRS. KITTIE HARBORD GRAVER, No. 2, Bronson Apartments, Ardmore, Pa.
Second Vice President—MRS. HENRY M. WHELPLEY, 2342 Albion Place, St. Louis, Mo.
Third Vice President—MISS JEAN GORDON, Englewood Hospital, 60th and Greene St., Chicago, Ill.
Historian—MRS. GEO. B. KAUFFMAN, Worthington Road, R. F. D. No. 7, Columbus, Ohio.
Treasurer—MRS. FRANK H. CARTER, 1555 Broadway, Indianapolis, Ind.
Secretary—MISS ANNA G. BAGLEY, 48 East Patterson Avenue, Columbus, Ohio.

Executive Committee

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MISS ZADA M. COOPER, two years, 124 Bloomington St., Iowa City, Iowa.
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WILLIAM MARTIN SEARBY

Born at Croft, Lincolnshire, England, January 21, 1835
Died in San Francisco, October 7, 1909

WILLIAM MARTIN SEARBY

Fifty-fifth President of the
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